

BRITAIN IN RECOVERY

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BRITAIN IN DEPRESSION

A Record of British Industries Since 1929.

Prepared by a Research Committee of the Economic
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PREPARED BY A RESEARCH COMMITTEE OF THE
ECONOMIC SCIENCE AND STATISTICS SECTION
OF THE BRITISH ASSOCIATION



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INTRODUCTION

By PROFESSOR J. HARRY JONES, M A.

THE present volume may be described as a sequel to *Britain in Depression*. In the Introduction to that volume it was stated that in September, 1933, the Committee of Section F of the British Association "decided to appoint a Research Committee to prepare a record of industrial and financial changes in Great Britain during the present world depression. The chief function of the Research Committee was to decide the form that the record might take and to invite others to collaborate in its preparation. The present volume is the result. I should add that while the purpose and general lines of the investigation were indicated to the contributors, each was invited to interpret his task in his own way. Not only is it generally impossible to reduce economic research to a set of standardized questions, but it was obvious that no two industries could be treated in precisely the same way. For this reason the readers of the volume will find no attempt at rigid uniformity of treatment."

In 1935 the Committee of Section F decided to invite the Research Committee to continue its work and to carry the "fragment of recent history" to the end of the period of economic recovery. The present volume is the result. It has not proved possible to continue the story of every industry that was examined in the first volume, on the other hand the Committee has been fortunate in securing the services of some contributors who were not available when the first volume was issued. In all cases the contributors were invited to interpret their own tasks in the light of the general purpose of the volume. On behalf of the Committee I venture to express its indebtedness both to the contributors and to the Honorary Secretaries.

Some reviewers of the first volume expressed the wish that the Committee itself had prepared a general survey, based upon the essays of individual contributors and other relevant material, and submitted an interpretation of the history of the depression.

Such a survey, however, was beyond the intention of the Committee. Interpretation is essentially the task of an individual. It is clear that if any Committee embarked upon the task of evaluating the forces in operation and measuring their relative strengths in a complex world its task would never be completed. The purpose of the first volume was to present a record of facts, such, too, is the purpose of the present volume. The depression examined in the first volume is receding into a past that is already becoming foggy; we have received considerable evidence that the first volume is proving useful to those who desire information about the depression. We hope that the present volume will also prove of service, not only as providing general information for those who desire no more than that, but also as a starting point for those who will be engaged in research into the period of industrial recovery that came to an end almost exactly a year ago.

But the present volume differs from the first in one important respect. Together they cover a complete trade cycle. The present volume contains a more comprehensive general section, including an introductory chapter by Mr. G. D. A. MacDougall, who presents a general survey of the complete cycle, based partly upon the material contained in the other sections but mainly upon official and semi-official statistics. The only task that remains for me, therefore, is to submit a few general observations for which the Committee is in no way responsible.

THE TRADE CYCLE

It has already been stated that the two volumes cover a complete trade cycle. It is a well-known historical fact that industry and trade, taken as a whole, passes through alternating periods of expansion and contraction, during which prices (including the price of capital and of labour) tend to rise and fall and the volume of unemployment tends to diminish and afterwards increase. This is the movement that is frequently called cyclical. Some critics object to the use of the words "trade cycle" on the ground that they suggest a definite time interval, whereas the cycles of the past have not been of equal length. A discussion of labels is not of much significance. The

use of the word "cycle" was probably first suggested by the persistence of the general movement to which I have referred, a persistence suggesting that the movement is caused by the action of some continuous force, or combination of such forces, operating within the economic system. In a complex world, in which political forces, new discoveries and the opening up of new territories play such an important part, the striking feature is not that general movements are so dissimilar but that essentially similar movements should be constantly repeated, not only in one country but throughout the greater part of the world. They may be described—to adapt a Meredithian phrase—as panting alternations of the quickened heart of economic society.

The trade cycle examined in the two volumes covered a period of approximately eight years. The period of recovery in this country came to an end nearly a year ago and almost exactly eight years after the termination of the previous period of recovery. We now appear to be advancing into another cyclical depression. The experience of Great Britain during the trade cycle was by no means unique; the depression and the recovery were almost world-wide.

AMPLITUDE OF FLUCTUATIONS

The history of earlier cycles shows that the amplitude of fluctuation is usually greater in some industries than in others. Thus, for example, it is greater in industries producing capital goods than in industries producing consumption goods, it is greater in industries producing durable goods than in industries producing perishable goods, it is greater in exporting industries than in industries producing for the home market, it is greater in industries producing primary commodities (agriculture and mining) than in industries producing manufactured goods, it is greater in industries producing goods for the wholesale market than in the distributive industries. This general statement, however, is ambiguous and calls for closer examination. In the first place the term "fluctuation" may refer to output, to employment or to prices. In many industries fluctuations in employment were apt to be more pronounced than fluctuations

in output, the reason being that during the depression the weaker economic units (which usually employed the greatest amount of labour per unit of output) or the least efficient workers were the first to be withdrawn. If either the demand for or the supply of a commodity is highly inelastic, fluctuations in price are apt to be greater than fluctuations in output. Thus, for example, fluctuations in the price of coal before the War were far greater than fluctuations in output.

In the second place, in the above classification of industries and commodities the same industry or commodity appears more than once. Capital goods and goods exported to other countries are durable goods, but some consumption goods are also durable. In some cases (such as motor vehicles) it is difficult to distinguish between capital goods and durable consumption goods. In the case of durable goods the fluctuations in output may be far greater than the fluctuations in demand, the reason being that at one time stocks are increased, so that production is in excess of concurrent demand, while at another time stocks are drawn upon, so that production falls below concurrent demand. It will thus be seen that in speaking of industrial depression or recovery, or industrial fluctuations, it is necessary to distinguish between fluctuations in output, in employment and in prices. These distinctions are examined more fully in Mr. MacDougall's general survey.

It may be pointed out, therefore, that previous experience had taught us to expect that cyclical fluctuations would be very pronounced in industries that are connected with capital development, such as steel production, engineering and shipbuilding, and in those industries producing durable goods (for home and foreign consumption), such as textile manufacture. Coal mining, producing partly for export and partly for the industries already indicated, had also suffered very serious cyclical fluctuations. Experience had also taught us to expect greater stability in the trades concerned with the distribution and sale of foodstuffs and the elementary comforts of life. Not only must men live, and eat to live, but in spite of the unemployment of a small proportion of the working population those who remained in employment found that the fall in prices was greater than the

fall in their wages and salaries, with the result that their standard of living actually tended to rise during a depression

There remains one further general consideration. Science, invention and improvements in organization result in an economy of human effort and a rise in the possible standard of living. The upward pressure, released by such invention, brings about a tendency for the boundaries of every industry to be pushed farther out, so that its products reach classes to which they had previously been denied. The result is that each cycle brings an increase in the national income much greater than that represented by the increase in population. But that is not all. Inventions bring new forms of enjoyment by creating new forms of economic activity. When these appear on the scene, or come into popular favour, their rapid growth tends to mitigate the cyclical depression. But they may grow rapidly because their products are preferred to the products of older industries, so that their growth may intensify the depression in the latter. In short, the industrial structure of a country slowly changes, and the changes that take place react upon cyclical movements, giving each its own characteristics.

Not only do inventions slowly change the industrial structure of the world as a whole but deliberately created changes in the structure of one part of the world may produce changes in other parts. Thus, for example, the process of industrialization that has been fostered since the War in many parts of the world has produced important changes in the industrial structure of Great Britain, whose exporting industries have been deprived of foreign markets that they had been accustomed to serve. It seems to me that one of the outstanding features of the trade cycle examined in this and the previous volume is the extent to which the industrial structure has changed and to which such changes have affected what appear to be cyclical movements.

SELECTED INDUSTRIES

The depression that started late in 1929 resembled previous cyclical depressions in that the industries most seriously affected were coal mining, iron and steel production, engineering and

shipbuilding, and the cotton industry. Other industries, such as transport by rail and by sea, textiles other than cotton, building, motor vehicle construction and miscellaneous metal industries also suffered. A few industries, such as the road transport industry, the electrical industries, and the laundry and distributive groups suffered no reduction in employment. The numbers employed in the distributive trades and the electrical trades actually increased. Between the two groups of industries, namely, those that suffered much and those that appear to have hardly suffered at all, lies a large group of industries in which the intensity of the depression varied but lay between the two extremes. So far, therefore, the depression showed no special industrial characteristic beyond its intensity, a special feature that was discussed in the first volume. But the recovery after 1932 presented features of special interest.

In the first place it appears to have started in a special group of industries, namely, building, the electrical trades and motor vehicle construction. The importance of building as a factor in the general recovery has been stressed by Mr. MacDougall and calls for no further comment. The cause of the expansion in the building industry itself is more difficult to discover. It may be, as some writers have suggested, that the revival in the construction of dwellinghouses was partly due to the fact that the fall in the cost of living had created a margin for additional expenditure on the part of those who remained in full employment, and that this additional expenditure was partly concentrated on the purchase of new houses. The fall in building costs and in the rate of interest was undoubtedly an important factor in the revival. But it is also probable that it was at this stage that the decentralizing movement in London and other large cities and the steady relative growth, since the War, in the working population of the South of England were translated into a demand for new houses on the outskirts of the great cities, particularly in the southern half of England. The expansion of the grid system, combined with the growth in building, probably provides the main part of the explanation of the expansion of the electrical industries. The growth of the motor vehicle industry is essentially that of a new industry which

reaches the inevitable stage of rapid expansion; the depression had served merely to hold the growth in check.

The change in tariff policy was also undoubtedly an important factor in the revival of a large group of industries which were given protection. The creation or expansion of such industries meant considerable expenditure upon capital equipment, with the result that the industries producing capital goods began to share in the revival. It is not surprising, however, that the revival in our export trade only became marked at a much later stage, and that consequently those industries, producing investment goods, which had been accustomed to depend upon capital development in the large exporting industries, did not feel the benefit of recovery at so early a stage as might have been suggested by the experience of the past.

STRUCTURAL CHANGES

The growth of new industries and the relative persistence of the depression in the "basic" industries represented a significant change in the structure of industry. Road transport increased at the expense of rail transport, electricity and oil were supplanting coal as the immediate source of power, protection in Great Britain favoured one group of industries while protection in other countries injured another group of industries. The change in the structure of industry helped to produce a change in the geographic distribution of the working population. The changing structure probably stimulated the revival; whether it was partly responsible for the check to recovery, in 1934, is a question that must remain unanswered.

The next period of noticeable expansion was associated with the policy of rearmament, though not necessarily due wholly to that policy. For the process of industrial expansion is usually jerky. Rearmament naturally led to a rapid and substantial expansion in the majority of those industries that had been suffering from the loss of foreign markets, namely, the iron and steel, engineering and shipbuilding group. Thus a real decline was arrested, and the industries enjoyed a boom that was not shared by the textile group and only partly shared by the mining industry. In view of the fact that expenditure on national defence

is being largely financed from the proceeds of taxation it is extremely probable that it has injuriously affected other industries, particularly those engaged in the production of consumption goods and services. Moreover, the pressure of orders for the supply of goods for defence has prevented the fulfilment of many private contracts. It would be a mistake, therefore, to assume that expenditure on national defence represents a corresponding net increase in production and employment. But there can be no doubt that such expenditure represents some net increase of that kind, and that it partly compensates for the failure of one group of industries even to recover the position that they occupied in 1929.

One of the outstanding features of the recovery period was the failure of British industry, in spite of rearmament, to absorb those who had been thrown out of employment by changes in the industrial structure. Except for a short period in 1937 the *percentage* of unemployment was higher than in the previous cyclical recovery, while the total volume of unemployment was far greater than in the earlier period. The growth of new industries was slower than the decline of some of the "basic" industries; and as the newer industries sought fresh regions the problem of the "depressed areas" remained acute until the new defence policy was initiated, while some such areas remained depressed even when the boom was at its height. The future effects of a modification of the defence policy upon the large centres of engineering, shipbuilding and aircraft construction are bound to be serious unless alternative employment can be found in areas that were already suffering from structural changes and the persistent decline of the basic industries.

INTEREST AND INVESTMENT

In concluding this short introduction I venture to make an apologetic reference to the absence of a section on interest rates and investment. The task of preparing the section was mine, and circumstances over which I had no control made it impossible to fulfil my promise and complete the section before it became necessary to publish the volume. As in all periods of continuous trade expansion, the net rate of interest rose above

the lowest level reached during the depression. But changes in rates, here and elsewhere, were influenced so largely by international movements of capital and by banking policy (which in turn was influenced both by such movements and by the supply of funds, representing the balances of public departments, under the general control of the Treasury) that brief generalizations would probably be misleading. It is noteworthy, however, that the trends of interest and wholesale prices (in so far as these can be seen in so short a period) are so related as to provide presumptive evidence in support of the view that secular changes in the rate of interest tend to accompany secular changes in the general price level.

Finally it may be suggested that the recovery in Great Britain differed from the recovery in the United States in two important respects. The latter was fostered, if not created and sustained, by the "pump-priming" policy of the Government, which financed schemes of public expenditure from the proceeds of short term loans. In spite of this fact—or, it may be, on account of it—the recovery was not accompanied by capital development on the scale usually associated with general industrial expansion. In Great Britain the Government pursued an "austere" monetary and budgetary policy, but even before the inauguration of the defence policy the revival in industry and trade was associated with investment on a fairly large scale and this, in turn, gave promise of a higher standard of living in the future. Employment was provided because there was an effective demand for capital goods, not because it was an end in itself.

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PART I

GENERAL

GENERAL SURVEY, 1929-1937

By G. D. A. MACDOUGALL, M.A.

UNIVERSITY OF LEEDS

INTRODUCTORY

A. GENERAL INDICES OF ACTIVITY AND PROSPERITY

- I Employment, Unemployment, and Output
- II Terms of Trade and the Import Surplus
- III Consumption

B. ANALYSIS BY INDUSTRIES

- I Employment
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- III Wages

GENERAL SURVEY, 1929-1937

INTRODUCTORY

THERE exists no one measure that indicates adequately the course of a business cycle. There are many possible indices of activity, while any attempt to measure changes in general economic well-being is confronted with many difficulties. The various indices of activity and prosperity do not always move in the same way or in the same degree, and in order to obtain a general picture it is necessary to examine the changes that have taken place from various points of view.

An attempt will be made, in the first section of this chapter, to describe briefly the movements during the period 1929-37 of some of these general indices, as revealed by the available statistics. A description of changes in employment, unemployment, and output is followed by a discussion of the effects of changes in the terms of trade and the import surplus. Finally, an attempt is made to trace the course of consumption during the period.

In the second main section of the chapter a general picture is given of the varying fortunes of the different industries by an examination, first, of the employment statistics and, secondly, of certain relevant indices of production and activity. In the last section is given a brief account of price and wage movements.

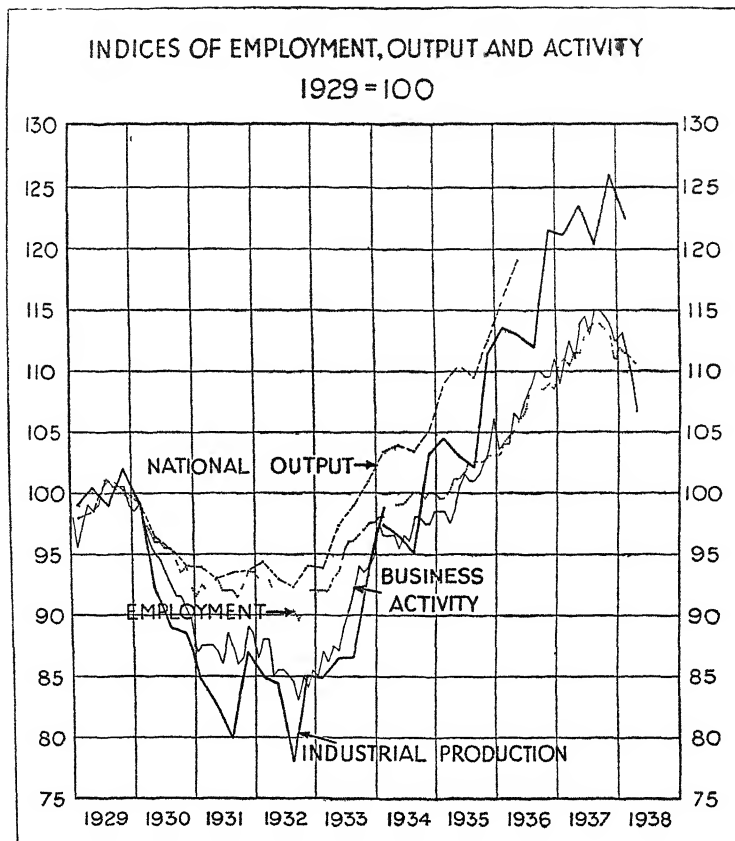
It is hoped that the chapter, which describes the whole period from 1929, may provide some sort of a background for the more detailed studies of the recovery period that fill the rest of the book.

A. GENERAL INDICES OF ACTIVITY AND PROSPERITY

I. EMPLOYMENT, UNEMPLOYMENT, AND OUTPUT

1. EMPLOYMENT The level of employment is frequently taken as a criterion of the economic situation. The course of insured

DIAGRAM I



- Board of Trade Index of Industrial Production
- Series I 1929 to first quarter of 1934—old index (1924 = 100) converted to 1929 base.
- Series II. First quarter 1934 to 1938—new index (1930 = 100) converted to a 1930 base equal to the index for 1930 in Series I
- Economist Index of Business Activity (1935 = 100), converted to 1929 base (Corrected for seasonal fluctuations)
- Employment index from Economist Index of Business Activity (1935 = 100), converted to 1929 base (Corrected for seasonal fluctuations)
- Output at 1930 prices (excluding invisible exports) (Seasonal variations eliminated) Based on Tables 91 and 93 of "National Income and Outlay," by Colin Clark.

employment is illustrated in Diagram I by the *Economist* index of employment, which is corrected for seasonal fluctuations. It is seen that employment reached a peak in the summer of 1929, when the number of insured persons in employment was higher than ever before.¹ During 1930 there was a severe fall, but this was checked in 1931, and at the end of that year there was a slight improvement, associated partly with the departure from the gold standard.² Employment fell again during 1932 and reached its lowest level in the autumn, about three years after the peak period in 1929. From that time employment expanded steadily for five years, and encountered no marked setback until the autumn of 1937, although some slackening of the rate of expansion was noticeable during the latter half of 1934 and the beginning of 1935. The 1929 level of employment appears to have been regained somewhere about the autumn of 1934 or the spring of 1935, and it may therefore be said that, so far as insured employment is concerned, the depression meant a pause of at least five years.

1929-32. Insured employment fell from the peak month of 1929 (September) to the worst month of 1932 (also September) by between 11 and 12 per cent, while if the monthly average for the two years is compared the fall is seen to be between 8 and 9 per cent. It is possible, however, that the fall was greater in insured employment than in employment as a whole. There was no doubt a considerable fall in employment among persons under 16 and over 65 years of age, while agricultural employment also fell (though relatively no more than all insured employment),³ but employment among domestic workers and other uninsured employees may well have increased. "Employment" among independent workers and employers, moreover, is likely to be less affected by a depression than employment among insured workers. Indices (2) and (3) in Table I, which are based on Mr. Clark's estimates, suggest that the fall in

¹ September was the peak month, according to the Ministry of Labour's estimates

² The effects were probably most felt in the textile industries. For a discussion of the largely temporary stimulus given to the cotton, wool textile, iron and steel, and coal-mining industries, the reader is referred to pages 344, 363, 271, and 164 of *Britain in Depression*

³ See Table XIV on page 42

TABLE I
GENERAL INDICES (1929 = 100)

	1929	1930	1931	1932	1933	1934 _a	1935	1936	1937
EMPLOYMENT									
(1) Insured persons in employment	100	96	92	91	95	99	102	107	112
(2) All wage-earners, and salary-earners earning less than £250 p.a., in work	100	97	95	96	97	101	104	—	—
(3) All occupied persons in work	100	98	96	96	98	101	104	—	—
UNEMPLOYMENT									
(4) Insured persons unemployed	100	158	217	227	206	174	162	139	117
(5) Insured persons unemployed per cent of all insured persons	100	15.8	21.1	21.9	19.8	16.6	15.3	12.9	10.6
OUTPUT AND ACTIVITY									
(6) Board of Trade Index of Production "old" series	100	92	84	83	88	99	—	—	—
(7) London and Cambridge Economic Service Annual Index of Production	—	92	—	—	—	98	105	115	123
(8) London and Cambridge Economic Service Quarterly Index of Production	100	92	84	85	93	104	110	118	124
(9) National output of goods and services (excluding "invisible" exports)	100	89	76	77	82	92	98	107	112
(10) Business Activity— <i>Economist</i> Index	100	94	93	93	98	104	110	—	—
			89	85	90	97	102	108	114

(1), (4), (5) Ministry of Labour, persons aged 16-64, excluding agriculture, monthly average, Great Britain

(1) A deduction is made for those directly involved in trade disputes, and for sickness, etc.

(4), (5) Excluding those directly involved in trade disputes. No extra allowance made for sickness, etc.

(The index of registered unemployment moves somewhat less violently than index (4).)

(2) Based on Clark, *op cit*, Table 28, U.K.

(3) Based on Clark, *op cit*, Table 28, U.K.

(6) See note below Diagram I for method of conversion

(7), (8), (10) Converted to 1929 base (7) 1937 figure provisional

(9) Based on Clark, *op cit*, Tables 91 and 93.

Note: An index of insured persons in employment for the United Kingdom, and with no deduction for sickness, etc., is strictly necessary for comparison with the indices of employment based on Mr Clark's figures ((2) and (3)). Such an index would not, however, be greatly different from the index given (1), and its use would not affect the main conclusions reached in the text.

employment among all wage and small salary earners was only some 4 or 5 per cent, while the proportionate fall in the number of all occupied persons in work was possibly even smaller. (If women working at home were also considered to be "employed," the proportionate fall in employment in the widest sense would appear to have been very small indeed.) It should be emphasized, of course, that the figures quoted take no account of short-time working among employers and employees, but it is true, nevertheless, that the fall in total employment after 1929 was relatively smaller than the fall in insured employment.

•1929-37. Over the whole period from 1929 to 1937 insured employment increased by between 12 and 13 per cent. Total employment possibly rose somewhat less, as the proportion of the occupied population within the unemployment insurance scheme is said to have been increasing year by year, even before taking account of the various extensions of the Act.¹ The movements of indices (2) and (3), however, suggest that employment as a whole may well have increased by as much as 10 per cent, though probably not by more. This is a rather surprising result, as the population increased over the whole period by only about 3½ per cent, while even the number aged 15 to 64 did not increase much more quickly.

2 UNEMPLOYMENT. For some purposes we are interested in changes, not in employment, but in unemployment, which measures the degree of wastage of the nation's available human resources. There are many difficulties in the measurement of changes of this sort. Some are theoretical. What human resources are in fact "available"? Some are statistical. These are discussed below in the section by Mr. Robinson. The general movements are, however, clear. Unemployment increased enormously between 1929 and 1932. Both the number and the proportion of insured persons unemployed more than doubled. In 1932 over one-fifth of all persons insured against unemployment were out of work, but if a wider definition than the number of insured persons were given to "the nation's available human resources,"

¹ See Minutes of Evidence taken before the Royal Commission on the Geographical Distribution of the Industrial Population. Tenth Day Questions 2464-2481.

the proportion would no doubt be somewhat smaller,¹ while if women working at home were included, it would be smaller still.

1932 was the worst year both for insured employment and for insured unemployment, and after that year unemployment was reduced steadily until the autumn of 1937, when there was a considerable setback. Whereas, however, employment appears to have regained the 1929 level probably in 1934 or 1935, the same is not true of unemployment. The statistics, taken as they stand, suggest that only in the better months of 1937 were the available resources being used as fully as in 1929. The unemployment percentage for the year 1937 was indeed greater than the percentage for any of the years 1924, 1927, 1929, and only slightly lower than for the years 1925 and 1928. Total insured unemployment, also, was higher in 1937 than in 1929. These figures contain many statistical difficulties and are not representative of employment as a whole, but they do suggest that only for a brief period, at the very end of the recovery movement, were the available human resources being used again as fully as during most of the period 1924-29 (excluding, of course, 1926, the year of the General Strike)

3 OUTPUT. Changes in the volume of what is produced may differ from changes in employment. We may expect to find both secular and cyclical changes in output per head. The Board of Trade index of production is shown in Diagram I, and the method of linking up the "old" and the "new" indices is described in the note below the diagram. Movements of the old index, adjusted for seasonal variations, are shown in the table on p. 9. The general movements of the index are similar in direction to those of the employment index. The unadjusted index reaches a peak in the last quarter of 1929, and the adjusted index in the third quarter. The fall is severe during 1930, but is checked in 1931, and there is a slight recovery at the end of that year which is not wholly seasonal. The index falls again to its lowest level in the third quarter of 1932, and subsequently rises steadily

¹ According to Mr Clark's definitions and estimates, between 16 and 17 per cent of the "occupied" population were out of work in 1932. (*Op cit.*, Table 94)

TABLE II
BOARD OF TRADE INDEX OF INDUSTRIAL PRODUCTION, ADJUSTED
FOR SEASONAL VARIATIONS (1924 = 100)
From *Board of Trade Journal*, 28th March, 1935

	Quarter			
	I	II	III	IV
1928	107.7	103.8	103.9	106.1
1929	108.8	112.2	114.6	111.6
1930	109.5	103.3	103.1	96.7
1931	93.2	92.3	92.6	95.2
1932	93.6	94.5	90.7	93.0
1933	93.3	96.9	100.2	102.8
1934	108.6	110.5	109.9	113.6

throughout the recovery period, although there is some evidence of a slackening in the rate of expansion during parts of 1934 and 1935. The reversal of the movement in 1937 is seen, not in a fall in the index between the third and the fourth quarter, but in a very much smaller rise than in the other recovery years, while between the last quarter of 1937 and the first quarter of 1938 there was a marked fall.

1929-32. The Board of Trade index of production fell, between 1929 and 1932, by about 17 per cent. The London and Cambridge Economic Service annual index (which includes house-building and agriculture) fell by 15 per cent, and the quarterly index (which is less representative) by 23 per cent. (See Table I) These figures almost certainly exaggerate the fall in the whole national output, where this is given any reasonably comprehensive definition. None of the indices purports to cover the output of many consumers' services which, according to the employment figures shown in a later section, was steadily expanding throughout the period. An index that covered these services would clearly show a smaller fall than the other less comprehensive indices. If we also decided to include in the national output the

use of durable consumers' goods, the fall would appear even smaller. The wider the definition, in this respect, the smaller will the fall appear to have been. An index of national output of goods and services is shown in Table B and Diagram I. It is based on Mr. Clark's figures, and covers industry, agriculture, transport, and services. The use of dwelling houses is considered to be part of the national output, but the use of other durable consumers' goods, such as private motor cars, is not. (No deduction is, of course, made for maintenance and depreciation.) The fall in this index from the highest quarter in 1929 to the lowest quarter in 1932 is only about 9 per cent, and the fall between the year 1929 and the year 1932 only 7 per cent. In a later section it will be suggested that the level of consumption was probably well maintained throughout the depression. It seems fairly easy to reconcile this with a fall of only 7 per cent in the national output, although we might have very serious doubts of its validity when faced with figures showing a fall of from 15 to 25 per cent in production in a narrower sense.

1929-37. It is extremely difficult to measure the change in output between 1929 and 1937. The Board of Trade index is not continuous over the whole period. The "new" index shows a rise, between 1930 and 1937, of 33 per cent. The "old" index (which did not cover building) fell between 1929 and 1930 by 8 per cent. If we choose to link up these figures, we find a rise of 23 per cent over the whole period. The L.C.E.S. quarterly index rose by only 12 per cent, but this index does not cover building, and is unrepresentative in other ways. The annual index rose in line with the Board of Trade index. The more complete index of the national output fell less after 1929 than the other indices but also rose more slowly between 1932 and 1935. It seems probable that it would show a rise of something like 20 per cent over the whole period, i.e. roughly the same as the proportionate rise in the two other main indices. (Employment in the "service" industries, as will be shown in a later section, increased relatively to all insured employment.) We may therefore perhaps think of an increase in the "real" national output of the order of 20 per cent.

4. OUTPUT PER HEAD. It must always be remembered that

any index of "real" output, where more than one commodity is included, must necessarily take the form of a (weighted) average of indices relating to different types of output. For this reason alone any measure of changes in output per head has a very limited meaning and must be interpreted with caution.¹ We have seen, also, that the various indices of employment and of output, though moving, on the whole, in the same directions, do not move in the same degree. This should make us even more cautious. Only the most tentative generalizations may be suggested.

In the first place, it seems probable that output per person in work, however we may define it, increased over the whole period. On any reasonable and comparable definitions, employment can hardly have increased by more, nor output by less, than 15 per cent. We may also say that output per head of the population increased more than output per person in work. It seems likely, moreover, that most of this increase in output per head came during the recovery period. It is obvious that output per head of the population, and per person available for work, fell between 1929 and 1932, and the indices suggest that there was at least no increase in output per person in work during that period. No attempt will be made to make more ambitious generalizations than these.

5 CONCLUSIONS. All the indices of employment and output that we have considered, and also the *Economist* index of business activity (which is shown in Diagram I), show a fall from a peak in the autumn of 1929 to a low point in the autumn of 1932. They also show that this fall was checked during 1931 and that there was a slight, but temporary, recovery at the end of that year. After 1932 there was a steady rise in all the indices until the autumn of 1937, when there is evidence of a setback. Most of the indices suggest that the recovery was least rapid during parts of 1934 and 1935.

We may say that the 1929 levels of employment, output, and activity were regained at some time during 1934 or 1935, although it was possibly not until 1937 that the available resources were

¹ It should also be remembered that most indices of output are partly based on indices of employment.

being once more utilized as fully as during the pre-depression period.

We have seen that the indices most commonly quoted probably exaggerate the fall in employment and output between 1929 and 1932, and also the degree of wastage of human resources during the depression.

Finally it seems probable that output per person in work increased over the whole period, and that the increase came wholly during the recovery. It is certain that output per head of the population fell between 1929 and 1932 and increased considerably between 1929 and 1937.

II TERMS OF TRADE AND THE IMPORT SURPLUS

1. For some purposes we may be interested in changes, not in the home output of goods and services, but in the "final outcome or result of the national labour, including (that is) the volume of goods obtained for that part of the product which is exported to foreign countries,"¹ i.e. in the quantity: home output *minus* exports *plus* imports, or, in the case of this country, home output *plus* what may perhaps be called the "real" import surplus (of goods and services).^{2, 3} Changes in this "final outcome of the national labour" may differ from changes in home output when there are unequal proportionate changes in home output and the real import surplus respectively. This real import surplus will increase, other things being equal, (i) if the money value of

¹ Haberler, *Prosperity and Depression*, p. 165

² It is, of course, impossible to measure this "real" import surplus quantitatively. It is possible, however, to correct the annual total values of visible imports and visible exports for changes in average values (the Board of Trade makes such corrections), and to find a series by subtraction which may be said to represent changes in the "real" (visible) import surplus (Dr E. C. Snow has suggested the use of such a method. See *J.R.S.S.*, 1931, pp. 388-9)

There are admittedly many theoretical difficulties in the method of approach adopted in this section, but it is believed to be less unsatisfactory than other possible methods, and the general conclusions reached in the text are believed to be correct.

³ Changes in the money import surplus are the net results of changes in the balances on account of (i) international capital movements, (ii) international gold movements, and (iii) income on international investment of all kinds. There may be a case for regarding only movements in the net income from overseas investment as important, but for the purpose of this review we shall discuss movements, from year to year, in the import surplus, for whatever reason they may have taken place.

the import surplus increases, or (ii) if there is a general fall in the prices of both exports and imports, or (iii) if average import prices fall relatively to average export prices. Conversely, the real import surplus will decrease if the opposite changes take place.

Notable changes of all three types have taken place during the period under review and the importance for this country is considerable. The following table, which shows the values of visible exports and imports respectively as percentages of the net national income, suggests that foreign trade, though possibly of declining significance in our national economy, still plays an important part. It follows that changes in the relation between the volume of imports and the volume of exports is worthy of consideration.

TABLE III
FOREIGN TRADE AND THE NET NATIONAL INCOME

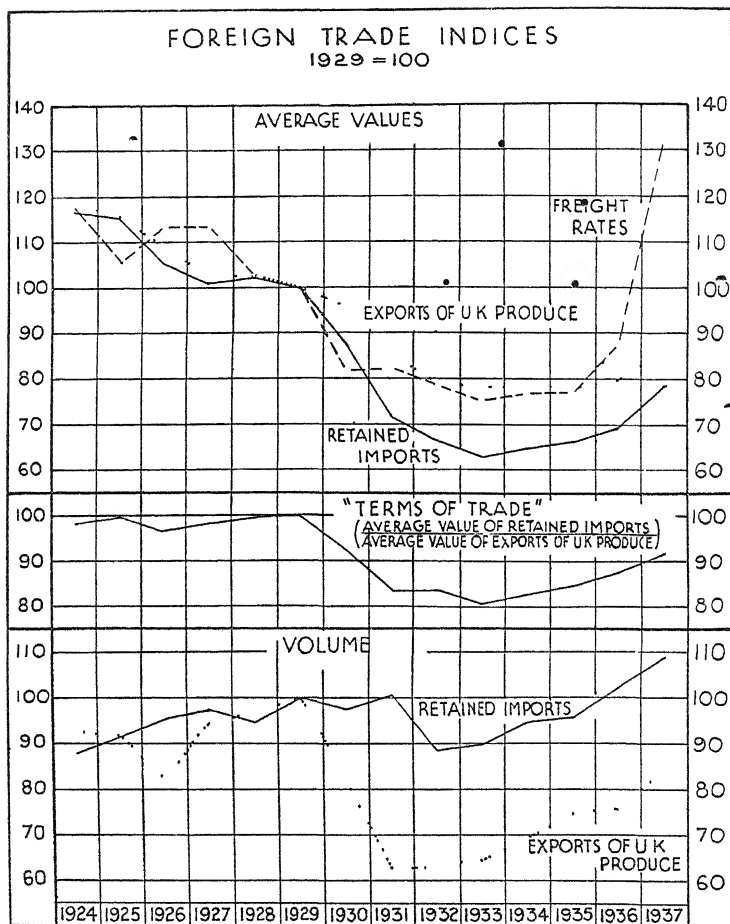
	Net National Income* £ millions	EXPORTS OF U K PRODUCE		RETAINED IMPORTS	
		£ millions	As Percentage of Net National Income	£ millions	As Percentage of Net National Income
1924	4035	801	20	1137	28
1929	4384	729	17	1111	25
1932	3844	365	9	651	17
1933	3962	368	9	626	16

* Clark, *op cit*, Table 37, and see Chapter I for definition

Note According to further estimates of the net national income in 1934 and 1935 by Mr Clark (*op cit*, p 90), and tentative estimates for 1936 and 1937 by the *Economist* (Budget Supplement, 9th April, 1938, p 12), it would appear that the values of imports and exports respectively formed roughly the same proportions of the net national income throughout the period 1932-37.

The table is intended to convey only a very general impression. It may legitimately be objected that the percentages shown are of doubtful significance. For a discussion of the problems involved, see Dr E C Snow's paper in the *J R S S* for 1931, entitled "The Relative Importance of the Export Trade". Dr Snow there estimates that the wages, salaries, and remuneration of capital in the export trade represented nearly 24 per cent of the corresponding total for industry, agriculture, and other services in 1924. He also suggests that the fall in the gross value of exports between 1924 and 1930 may exaggerate the true decline in the amount of labour, etc., employed in export.

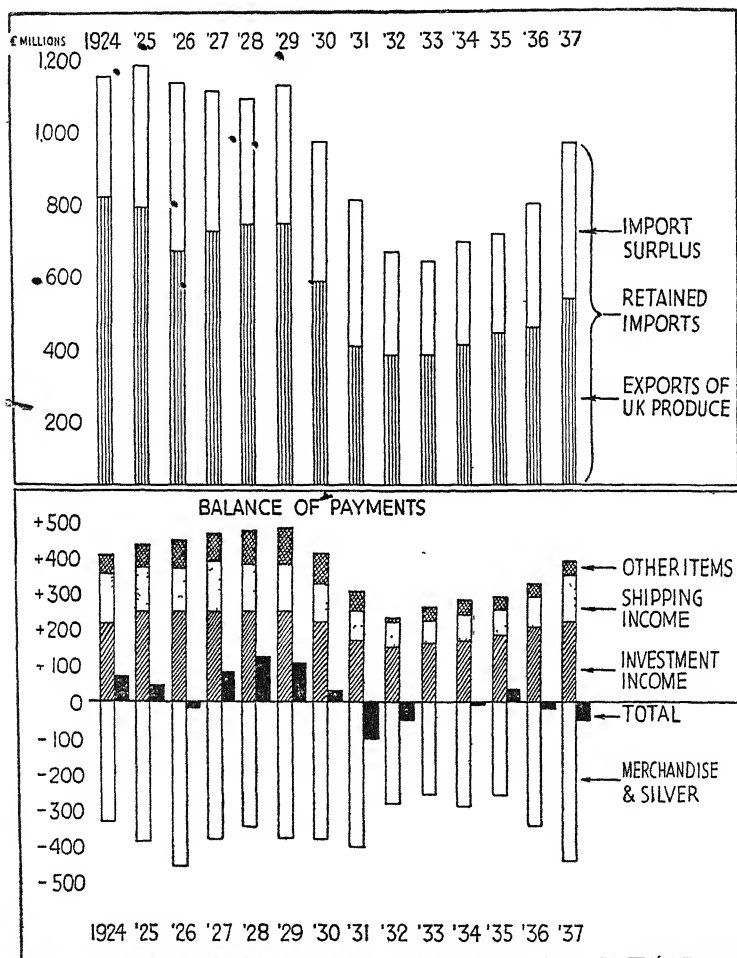
DIAGRAM II
(See Table IV)



2. THE TERMS OF TRADE. The Board of Trade has calculated indices of the average values of (visible) imports and exports. These are shown in the accompanying table, which explains the method of conversion,¹ and in Diagram II. They suggest that,

¹ Particular attention is directed to Note 2 below Table IV, which suggests that the conclusions reached in the text are independent of the particular method adopted in linking up the available indices

DIAGRAM III
(See Table V)



so far as visible exports and imports are concerned,¹ little change took place between 1924 and 1929 in the terms of trade (i.e. in the index representing changes in the ratio average value of

¹ Throughout this section the terms "visible imports and exports" refer to retained imports and exports of U.K. produce, i.e. re-exports are excluded

imports — average value of exports) Both indices fell together. During 1930, however, import prices fell much more rapidly than export prices, so that the terms of trade moved in our favour. This tendency continued, though in less marked degree, until 1933.¹ Some explanation may be found by a study of the price indices shown in a later section. It is well known that our imports consist primarily of raw materials and foodstuffs and our exports of manufactured products (coal being an important exception). A reference to Diagram IX below shows that the prices of basic materials and of foodstuffs fell much more markedly during the years of falling prices that followed 1929 than did those of manufactured products.² After 1933 the terms of trade moved against us, the tendency being most marked during the period of rapidly rising prices which began about the middle of 1936. During the latter part of 1937, however, the fall in raw material prices, together with the maintenance of the prices of manufactured products, combined to check and reverse the movement. Between the third quarter of 1937 and the first quarter of 1938 average import prices fell markedly while average export prices continued to rise.

One is tempted to describe the experience of this country as typical of the experience, during the course of a trade cycle, of any highly industrialized country that depends to a large extent on imports for its supplies of foodstuffs and raw materials. The terms of trade will move in its favour during the downswing and against it during the recovery. This was the experience of the United Kingdom, not only between 1929 and 1937, but also during the period 1919-24.³ Over the whole period from 1929 the position of this country appears, on balance, to have improved,

¹ The annual indices do not show the relatively small improvement in the terms of trade during 1931 as compared with 1930. Reference should be made to the quarterly figures.

² The Board of Trade indices of the average value of imports of food, drink, and tobacco, and of raw materials, fell more rapidly during the years to 1932 than did the corresponding indices relating to both exports and imports of manufactures. Incidentally, they also fell more rapidly than the indices of average values of *exports* of food, drink, and tobacco, and of raw materials (the price of coal was relatively well maintained). See *Bank of England Statistical Summary*, November, 1934, p. 137, for diagrams.

³ See John Inman, "The Terms of Trade," *The Manchester School*, 1935, Vol. VI, No. I, for a discussion.

TABLE IV

FOREIGN TRADE INDICES OF VOLUME AND AVERAGE VALUE AND OF FREIGHT RATES
(1929 = 100)

	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937
AVERAGE VALUE														
Retained Imports (based on 1924 quantities)	(a ¹) 117	115	105	101	102	100	88	—	—	—	—	—	—	—
(" " 1930 ")	(b ¹) 115	—	—	—	—	—	88	71	66	63	65	66	69	—
(" " 1935 ")	(c ¹) —	—	—	—	—	—	85	—	—	—	—	66	69	79
Exports of U K Produce (based on 1924 quantities)	(a ¹) 110	116	100	103	103	100	95	—	—	—	—	—	—	—
(" " 1930 ")	(b ¹) 115	—	—	—	—	—	95	85	80	78	78	78	79	—
(" " 1935 ")	(c ¹) —	—	—	—	—	—	91	—	—	—	—	78	79	86
Average Value of Imports — " Average Value of Exports														
("Terms of Trade")														
Freight Rates (a ¹)	98	100	97	98	100	100	92	84	84	86	82	85	87	92
	117	106	113	113	102	100	82	82	78	75	76	77	87	132.5
VOLUME														
Retained Imports (based on 1924 average values)	(a ¹) 88	91	95	98	95	100	98	—	—	—	—	—	—	—
(" " 1930 ")	(b ¹) 89	—	—	—	—	—	98	100	88	90	95	96	103	—
(" " 1935 ")	(c ¹) —	—	—	—	—	—	102	—	—	—	—	96	102	109
Exports of U K Produce (based on 1924 average values)	(a ¹) 92	92	82	94	97	100	82	—	—	—	—	—	—	—
(" " 1930 ")	(b ¹) 95	—	—	—	—	—	82	63	63	64	69	75	76	—
(" " 1935 ")	(c ¹) —	—	—	—	—	—	86	—	—	—	—	75	76	83

(a) *Economist* index of tramp shipping freight rates. The Chamber of Shipping index moves in much the same way as the *Economist* index, but shows a somewhat greater fall after 1929 and subsequently a rather greater rise.

Notes. (1) Board of Trade indices of the average value and volume of imports and exports during the period 1924-37 are available in three series—

- (a) 1924-30, based on 1924 quantities and average values respectively (1924 = 100)
 (b) 1924 and 1930-36, based on 1930 quantities and average values respectively (1930 = 100)
 (c) 1930 and 1935-37, based on 1935 quantities and average values respectively (1935 = 100).

In all cases, these series have been multiplied by factors necessary—

- (i) to convert the 1929 figures in series (a) to 100, to obtain series (a¹),
 (ii) to convert the 1930 figures in series (b) to the value of the 1930 figures in the corresponding series (a¹), to obtain series (b¹),
 (iii) to convert the 1935 figures in series (c) to the value of the 1935 figures in the corresponding series (a¹), to obtain series (c¹).

The figures in italics form the basis of the diagrams. The converted indices are shown to the nearest whole number, as also are the terms of trade index and the freight rate index, but the diagrams are drawn from more "accurate" figures.

- (2) It is believed that the general conclusions reached in the text would not be altered if other methods of linking up the series were adopted. In particular, the comparison of *retail* movements in the indices referring to exports and imports respectively is little affected. For example, in comparing the years 1930 and 1935, we find that the falls in the average value of *both exports and imports* appear greater in the series (b¹) (which are based on 1930 quantities) than in the series (c¹) (which are based on 1935 quantities). The falls in volume, on the other hand, of *both exports and imports*, appear greater in the series (c¹). For a full discussion, see the *Board of Trade Journal*, 4th March, 1937.

only part of the advantage gained during the years to 1933 having been lost during the recovery. An apparent secular trend was thus continued, because the terms of trade during the period 1924-29 represented an "improvement," so far as it can be measured, of some 15 per cent on 1913.¹ The terms of trade in 1913, moreover, were probably more favourable than in most other pre-war years after 1900, while there is also some evidence of a steady "improvement" in the terms of trade during the last twenty years of the nineteenth century.²

So far we have considered only visible exports and imports, and it is necessary to take account of shipping services, this country's most important invisible export (if, as seems correct for this analysis, income from overseas is excluded). It is improbable that our general conclusions require much modification. Shipping income is relatively unimportant in relation to the value of visible exports. The net earnings of British shipping³ in both 1931 and 1936 were, according to the Chamber of Shipping estimates, between £70 and £75 million, while exports of United Kingdom produce were valued at about £390 million in 1931 and £440 million in 1936. A general index of the average value of exports (including shipping services) would thus differ little from the Board of Trade index (which refers to visible exports only) unless movements in the average value of shipping services diverged considerably from movements in average visible export prices.

The freight rate indices published by the *Economist*, "Lloyd's List," and the Chamber of Shipping refer to tramp shipping only, and may not be representative of shipping as a whole. It is hoped, however, that despite this and other difficulties, they are adequate for our present purpose. A marked fall in freight rates during 1929 was checked in 1930 and 1931, and a comparison of the year 1929 with the years 1931 to 1933 suggests that

¹ See Inman, *op. cit.*, pp. 47-50, for a discussion.

² See Taussig, *International Trade*, and *Economic Journal*, March, 1925.

³ I.e. gross earnings of British shipping employed in the foreign trade, less expenditure abroad. The Board of Trade figures for net shipping income include disbursements by foreign ships in British ports. For details, see *Board of Trade Journal*, 17th February, 1938, and the paper read before the Royal Statistical Society by Mr. L. Isserlis on 21st December, 1937, entitled "Tramp Shipping, Cargoes and Freight."

freight rates had fallen more than average export values but less than average import values. It is unlikely that our general conclusion regarding the improvement during this period in the terms of trade need be modified

From about the middle of 1936 freight rates rose very rapidly until September, 1937, after which there was a strong reaction. It appears likely that this rise in freight rates offset considerably, if not completely, the tendency we have noted for the terms of trade to move strongly against this country during 1936 and most of 1937. Between 1936 and 1937, for example, we find that the index of the average value of exports increased by 8 per cent as against 14 per cent in the case of imports. On the other hand, "the freight indices published by the *Economist*, 'Lloyd's List,' and the Chamber of Shipping show average increases in the rates in 1937, as compared with 1936, of 52, 51, and 55 per cent, respectively. These index numbers relate to tramp shipping. For tanker tonnage there was an increase of similar or greater magnitude but liner rates are believed not to have advanced to the same extent, though showing a considerable improvement on 1936"¹ It is quite possible that changes of this order of magnitude necessitate some revision of our general conclusions. The movement of the terms of trade against us during the last two years of the period was much less marked than is sometimes imagined, if we take account of shipping services.² Moreover, the improvement over the whole period from 1929 to 1937 was perhaps somewhat greater than is suggested by the Board of Trade indices

It is necessary to have some idea of the order of importance of changes in the terms of trade for the economy as a whole.

¹ *Board of Trade Journal*, 17th February, 1937, p. 231

² The following very rough calculation is presented for what it is worth. Giving weights of 6 and 1 to visible exports and shipping services respectively (on the basis of the estimate given in the text of their relative importance in 1936), and assuming that the increase in the average value of shipping services between 1936 and 1937 was only 40 per cent, we find an increase of about 13 per cent in the average value of exports (including shipping services) as against 14 per cent in the case of visible imports. It should also be remembered that the value of imports includes freight charges, and that 68 per cent by value of our total imports was carried in British vessels in 1936 (*Board of Trade Journal*, 17th February, 1938, p. 230).

The Board of Trade indices show a relative fall, between 1929 and 1933, of something like 20 per cent in average import prices as compared with average export prices. We may perhaps be allowed to think of a "20 per cent improvement in the terms of trade." Exports of United Kingdom produce were 17 per cent and 9 per cent of the net national income and retained imports 25 per cent and 16 per cent, in 1929 and 1933 respectively. We might perhaps expect the change in the terms of trade to have affected the net national income by something of the order of 5 per cent or less. An estimate by Mr. Colin Clark is in conformity with this rough guess. Between 1929 and 1933 he estimates that real income per person in work (including income from overseas) decreased by about 2 per cent, if no account is taken of changes in the terms of trade. Allowing for changes in the terms of trade, he finds an increase of about 3 per cent over the same period.¹

3 THE IMPORT SURPLUS. We have seen that between 1929 and 1933 the terms of trade moved in our favour and that at the same time there was a fall in the prices of both imports and exports. Between 1933 and 1937 opposite movements were taking place. If the money value of the import surplus had remained constant, then the real import surplus would have increased between 1929 and 1933 and fallen between 1933 and 1937, i.e. it would have moved in general in a direction opposite to that followed by home output. The "final outcome of the national labour" would have fluctuated less markedly than home output.

We should perhaps expect this tendency to have been offset by a fall during the depression in income from overseas investment (and so in the money import surplus), and a corresponding rise during the recovery. Investment income, according to the Board of Trade estimates, did in fact fall from £250 million in

¹ Clark, *op. cit.*, p. 208; Table 94. The details are—

	1929	1933	Change
	£	£	£
Real net income per person in work (including income from overseas)	226 0	221 9	- 4 1
Ditto—at consumption prices (i.e. including effect of terms of trade)	221.9	228 8	+ 6.9

1929 to £150 million in 1932, while the item "Commissions, etc., fell from £65 million to £25 million¹ There was, however, no corresponding decline in the money import surplus The visible import surplus actually rose between 1929 and 1931, while shipping income fell heavily The result was a fall in the balance on current account from + £103 million in 1929 to - £104 million in 1931 The abandonment of the gold standard in September, 1931, and the subsequent imposition of tariffs, etc., was indeed followed by a marked reduction in the money import surplus in 1932² which considerably reduced the negative balance on current account, but the net reduction in the total import surplus between 1929 and 1932 was small. (The visible import surplus fell by about £100 million, but shipping income fell by £60 million)

Between 1929 and 1931 the real import surplus rose enormously,³ and the fall in home output was offset to a considerable extent Prices fell greatly, the terms of trade improved and, despite a fall in investment income (in the widest sense), the total money value of the import surplus (taking into account the fall in shipping income) showed a marked increase. Between 1931 and 1932 there was a large reduction in the monetary value

¹ This item includes both interest payments on short-term investments and payments for various services rendered, including merchanting commissions on overseas produce, brokers' commissions, and insurance remittances The item "is of an ambiguous nature, but seems to partake more nearly of the nature of the income from property than from 'export of services'" (Clark, *op cit*, p 92)

² The fall in the volume of imports was especially marked in the case of manufactured products Indices of volume of retained imports (1930 = 100)—

	1931	1932
Food, etc	108	104
Raw materials	94	96
Manufactures	102	65
Total	103	90

³ According to the indices of volume, the volume of imports was maintained, while the volume of exports fell by between 35 and 40 per cent The excess of visible imports over visible exports (both being valued on the basis of 1924 average values) increased from £429 million in 1929 to £556 million in 1930, and (on the basis of 1930 average values) from £386 million in 1930 to £548 million in 1931 If we choose to link up these Board of Trade estimates, they suggest that there was a rise of between 80 and 90 per cent in the "real" visible import surplus between 1929 and 1931, while if the decline in shipping income were taken into account the rise in the total real import surplus would probably appear to have been greater

TABLE V
UNITED KINGDOM IMPORTS AND EXPORTS BALANCE OF PAYMENTS
(Million £ s)

	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937 ¹
TOTAL VALUES														
Retained Imports	1137	1167	1116	1095	1075	1111	957	797	651	6·6	680	701	787	954
Exports of U K Produce	801	773	653	709	724	729	571	391	365	368	396	426	441	522
BALANCE OF PAYMENTS														
Net Transactions on Current Account														
(Board of Trade Estimates)														
Merchandise	- 337	- 393	- 463	- 386	- 352	- 382	- 386	- 407	- 286	- 258	- 284	- 275	- 316	- 132
Silver	- 2	2	-	-	- 1	1	-	2	- 2	- 5	- 10	14	1	- 10
	- 338	- 392	- 463	- 387	- 352	- 381	- 386	- 408	- 287	- 263	- 204	- 261	- 315	- 113
Government Transactions ²	- 25	- 11	4	1	15	21	19	14	24	- 2	7	- 2	3	1
Shipping Income	+ 74	+ 124	+ 120	+ 140	+ 130	+ 130	+ 105	+ 89	+ 70	+ 65	+ 70	+ 70	+ 85	+ 130
Investment Income	+ 220	+ 250	+ 250	+ 250	+ 250	+ 250	+ 220	+ 170	+ 150	+ 160	+ 170	+ 135	+ 205	+ 220
Commissions, etc	+ 60	+ 60	+ 60	+ 63	+ 65	+ 65	+ 55	+ 30	+ 25	+ 30	+ 30	+ 30	+ 30	+ 35
Miscellaneous	+ 15	+ 15	+ 15	+ 15	+ 15	+ 15	+ 15	+ 10	+ 15	+ 10	+ 10	+ 10	+ 10	+ 10
	+ 410	+ 438	+ 449	+ 469	+ 475	+ 484	+ 414	+ 301	+ 236	+ 263	+ 257	+ 203	+ 327	+ 391
TOTAL	+ 72	+ 46	- 14	+ 82	+ 123	+ 103	+ 28	- 104	- 51	-	7	+ 32	- 18	- 52

¹ Provisional

² Including items on capital account

of the import surplus, and despite a further fall in prices it seems certain that the real surplus also fell considerably.¹ The "final outcome of the national labour" must have fallen more than home output, which showed only a small decline. Between 1929 and 1932, however, the net fall in the money import surplus does not appear to have been sufficient to offset the "favourable" factors (the fall in prices and the improvement in the terms of trade), and the real import surplus increased.² The net result was a definite mitigation of the effects of the depression.

Between 1932 and 1933 there was some further fall in prices and some improvement in the terms of trade, but the money import surplus also fell slightly and there was little change in the real import surplus. During the whole period 1932 to 1935 the total money import surplus remained fairly constant, despite a continuous rise in investment income. (The result was a change in the balance on current account from -£51 million in 1932 to +£32 million in 1935.) Meanwhile there were no appreciable net changes either in average values or in the terms of trade. The real import surplus thus remained steady. As, at the same time, home output was increasing, it follows that the "final outcome" must have risen less rapidly.

During the last two years of the recovery period prices were rising more and more rapidly, while the terms of trade continued to move against us. Between 1935 and 1936, however, these forces appear to have been more than offset by a marked rise in the total money import surplus, and it is probable that the real import surplus rose in line with home output.³ Between 1936 and 1937,

¹ The volume of visible exports was maintained, while the volume of visible imports fell by some 12 per cent. The "real" visible import surplus in 1932 (on the basis of 1930 average values) was over 20 per cent smaller than in 1931.

² The indices show a fall of 12 per cent in the volume of visible imports as against 37 per cent in the volume of visible exports, but as imports are more important than exports we cannot definitely say that the "real" import surplus increased. If, however, we link up the Board of Trade estimates in the manner indicated in the last footnote but one, we obtain a figure of over 40 per cent as the rise in the real *visible* import surplus. If we took account of shipping, the rise in the *total* real import surplus might appear to have been greater.

³ According to the indices of volume, the volume of visible imports showed a considerably greater proportionate rise than the volume of visible exports, and therefore, as visible imports are more important than visible exports, we are justified in thinking of a definite increase in the real visible

on the other hand, it is doubtful whether the rise in the money import surplus (approximately half of the rise in the visible money import surplus was offset by a marked rise in shipping income) was sufficient to do more than offset the rise in prices and the adverse movement in the terms of trade.¹ Such conclusions as can be drawn from these primitive calculations seem to be that the "final outcome" rose in line with home output during the earlier part of the last two years of recovery, but lagged behind during the period of very rapidly rising prices. A more marked divergence in the movements of the two quantities was prevented only by a rapid rise in the money import surplus. This rise was greater than the rise in investment income, and the balance on current account declined from + £32 million in 1935 to - £52 million in 1937.

4 CONCLUSION. The analysis has been a dangerous one, but it is believed that certain broad conclusions may be stated that are not affected by theoretical difficulties. The real import surplus increased enormously between 1929 and 1931. The total money import surplus increased markedly while prices were falling and the terms of trade rapidly improving. The real import surplus fell between 1931 and 1932 as a result of a sharp cut in the money import surplus, but on balance showed a considerable increase between 1929 and 1932. The effects of the depression were thus mitigated and the "final outcome of the national labour" fell less, between 1929 and 1932, than home output, although the fall in the "final outcome" between 1931 and 1932 was greater than that in home output.

During most of the recovery period the real import surplus definitely lagged behind home output, which must therefore have risen proportionately more than the "final outcome." After 1933 prices were rising and the terms of trade moving against us, while the money import surplus failed to increase appreciably

import surplus. On the basis of 1935 average values the real visible import surplus, as defined, appears to have risen by some 15 per cent, i.e. at least in the same proportion as home output.

¹ The volume of visible imports showed an appreciably smaller proportional rise than the volume of visible exports, and the real visible import surplus, on the basis of 1935 average values, appears to have shown only a very small increase. It is hard to say what would be the result of taking shipping services into account.

until the last two years of the period, when prices began to rise more rapidly than before.

The full effects of the various forces we have discussed were thus that the "final outcome of the national labour" fluctuated less widely than home output, while over the whole period from 1929 to 1937 it seems not unlikely that the former quantity increased more than the latter.¹

During the years after 1929 the annual volume of imports was, on an average, about the same as during the years 1924 to 1929. The volume of exports, on the other hand, was considerably lower. This change was made possible, despite a fall in income from overseas investment (including short-term interest), by three developments. First, the terms of trade were more favourable; secondly, prices in general were lower, and thirdly, while a positive balance on current account was normal during the earlier years, a negative balance was more common during the years after 1929.

III. CONSUMPTION

1. We have seen that employment, in the widest sense, fell between 1929 and the trough of the depression in 1932 by only perhaps 4 or 5 per cent. So far as it is possible to measure such changes quantitatively, we may think of a fall in the national output, including non-industrial output of goods and services, of the order of 7 or 8 per cent, but we have seen that the "final outcome of the national labour," which allows for the increase that took place in the real import surplus, must have fallen even less. It was, moreover, the industries producing capital goods (and goods for export) that suffered most severely, and it is therefore quite conceivable that the volume of consumption was maintained and even increased throughout the period.

2. A considerable body of evidence supports this hypothesis. We have seen that the prices of imported foodstuffs fell rapidly after 1929 and it is clear, in the first place, that most

¹ This judgment involves a measurement of the change in the somewhat nebulous real import surplus over a period of eight years, and is even more dangerous than those judgments that concern changes over shorter periods. It may be noted, however, for what it is worth, that the real visible import surplus, as defined, increased by between 60 and 70 per cent between 1929 and 1937.

wage-earners remaining in full employment benefited by rapidly falling retail prices, especially of foodstuffs, while money wages were relatively well maintained. This point is further discussed in the section on prices and wages. It is possible that the official index exaggerates the fall in the cost of living, which is of course a difficult concept, because of the large weight given to food. For the same reason the rise after 1933 may be exaggerated. The official wage index, on the other hand, probably overstates the rise in wages during the recovery. (See p. 82)

TABLE VI

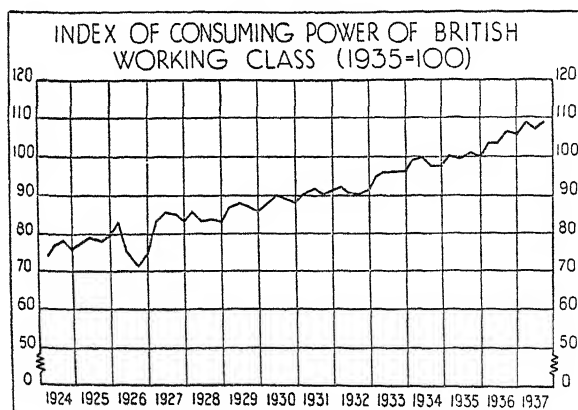
	1929	1930	1931	1932	1933	1934	1935	1936	1937 ¹
(1) Wage Rates	100	100	98	96	95	96	97	99	103
(2) Cost of Living	100	96	90	88	85	86	87	90	94
(3) "Quotient" (1) - (2)	100	104	109	109	112	111	111	111	110
(4) Retail Food Prices	100	94	85	82	78	79	81	84	91

¹ Provisional

(1), (2), and (4) Ministry of Labour indices (converted to 1929 base)

(3) More "accurate" figures used than shown in (1) and (2)

DIAGRAM IV



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See text for description

It is more difficult to generalize about the consuming power of the working class as a whole. Large sums, it must be remembered, were paid out to a growing number of unemployed, while unemployment was increasing more rapidly than employment was declining. The movements of an index, compiled by the *Economist*, of "the total real income of the insured population, employed and unemployed together,"¹ suggest that the general movement was steadily upwards. The rate of increase prevailing between 1924 and 1929 does not even appear to have been seriously checked, except possibly in 1932. The index, as the *Economist* emphasizes, gives only a very rough indication of changes in the consuming power of the working class. It refers only to the section of the population covered by Unemployment Insurance and not to the working class as a whole, while "its chief defect is that it makes no allowance either for overtime or for such short-time as does not appear in the unemployment returns." It does, however, suggest the possibility that the consuming power of the working class as a whole was increasing fairly steadily.

An index of expenditure on consumption by persons with annual incomes of less than £250, based on Mr. Clark's figures,² points to the same broad conclusion, when taken in conjunction with the official cost of living index. It moves as follows—

1929	1930	1931	1932	1933	1934	1935
100 ³	98	97	94	96	100	104

A very rough comparison of the *Economist* index with that showing changes in the numbers insured against unemployment suggests that the consuming power *per head*, i.e. per actual or potential worker, remained roughly the same between 1929 and 1932, although it is obvious that undue weight must not be attached to the result of such a primitive calculation.⁴ The distribution of consuming power, however, became more unequal, those remaining in work gaining at the expense of those thrown

¹ *Economist*, 1st January, 1938, pp 13-14 "The index has been calculated on the basis of the official indices of wage rates and of the cost of living, of the monthly returns of employed and unemployed, and of the returns of sums paid by various agencies to the unemployed"

² *Op cit*, Table 12, and p 251 for definition and method of calculation

³ Based on last two quarters

⁴ Some of the statistical difficulties involved are discussed in the section on "Employment and Unemployment," by Mr Robinson

out of employment and of those recruits to the labour market who failed to find jobs.

During 1933 the cost of living was still lower than in 1932, while employment was expanding rapidly and unemployment declining. The indices of consuming power advanced considerably and there can be little doubt that consuming power per head of the working class increased also. The rate of recovery was somewhat slower during parts of 1934 and 1935, but the cost of living remained low and consuming power probably continued to expand. During the remainder of the period until the summer of 1937 the cost of living was rising (and the rise became rapid during 1936 and 1937) but employment and wages were also rising. (Mr. Rainsbottom's wage index, which makes no allowance for overtime earnings, etc., rose as quickly during 1936 as the cost of living index.)¹ Consuming power expanded steadily.

During the last quarter of 1937 occurred the first serious setback to employment since the recovery began in 1932. Meanwhile the cost of living continued to rise, although the movement after the middle of 1937 was probably largely seasonal,² and despite a further rise in wage rates it is possible that consuming power suffered a setback. Broadly speaking, this was the first time during the whole period after 1929 that a marked fall in employment had been accompanied by a marked rise in the cost of living, although it must be remembered that money wage rates were also rising rapidly.

It seems probable, then, that working class consumption expanded fairly steadily throughout the period, but that there may have been some check in 1932 and during the last few months of 1937. During 1930, 1931, and 1932, consumption *per head* was quite possibly maintained, although this meant that some gained at the expense of others. During the rest of the period it seems not unlikely that consumption per head increased.

3. About those with higher incomes it is more difficult to generalize. Profits form an important part of such incomes, and several relevant figures are shown in the table on p. 29. According to the first index it would appear that profit

¹ See Diagram XII

² See Section on "Cost of Living," p. 77 below.

TABLE VII
PROFITS, 1929-37

	1929	1930	1931	1932	1933	1934	1935	1936	1937
(1) Profits <i>earned</i> during year (1929 = 100)	100	86	72	70	77	89*	99*	113*	
(2) Profits <i>reported</i> during year (1929 = 100)	100	99	77	63	63	74	86	97	113
(3) Percentage of profits reported during year paid out in dividends	81	82	90	93	88.5	80	78	74	72

* Provisional

(1) Lord Stamp's general index of aggregate profits (converted to 1929 base) based on *Economist* data and figures of profits assessed to income tax. The index numbers are entered against the years in which, approximately, the profits were made.

(2) *Economist* chain index of total profits after debenture interest based on company reports published during the calendar year.

(3) *Economist* sample.

earning power was immediately and seriously affected by the decline in activity that began at the end of 1929. The general recovery, again, which began at the end of 1932, seems to have had an immediate effect on profits. In short, profits moved very much in line with general business activity and the decline during the depression was severe.

As far as the investor is concerned, however, there is some lag between the earning and the distribution of profits, even when interim dividends are paid. The second index shows the other side of the story. A large part of profits reported during any calendar year is earned during the previous year,¹ and the lag between the two series is very clear. In view, however, of the practice of declaring interim dividends, and of numerous other difficulties, it is impossible to measure at all accurately the lag between the earning and the distribution of profits.

¹ In a discussion of company reports published during 1937, the *Economist* (15th January, 1938) writes: "Nearly 70 per cent of the profits in last year's sample were, in fact, *reported* before June 30th and were largely *earned* before March 31st, 1937."

The *Bank of England Statistical Summary* publishes the *Economist's* figures of profits reported. "The year ending with the third quarter is shown because in general it is probably more representative than any other four consecutive quarters of profits made in the previous calendar year." (*B.E.S.S.*, October, 1937.)

There may have been some maintenance of dividends, after profit earning power had fallen, for the reason just discussed. A more important reason, however, was the attempt to maintain dividends either by reducing the proportion of profits not distributed, or actually by drawing on reserves previously accumulated. The importance of this policy is illustrated by the figures in the last row of the table.¹ The effect of falling profits on dividends was greatly mitigated and conversely the rise in profits was not allowed to have its full effect on dividends. Over the whole period there seems to have been a tendency towards increasing self-sufficiency in finance. Thus, of the profits reported during 1937 and analysed by the *Economist*, 28 per cent were not distributed, as compared with 19 per cent in 1929.²

The fall in dividends was postponed and mitigated for the reasons discussed. Interest payments and other income from the ownership of property may be expected to fluctuate less widely than profits, although it must be remembered that the rate of interest was falling throughout a considerable part of the period and that many conversions were successfully carried out, especially during 1932 and the succeeding years. We should expect higher salaries, also, to fluctuate less than profits, and in general it would seem unlikely that the higher incomes fell by nearly as much as the 30-35 per cent suggested by the indices of profits.

However, Mr. Colin Clark's figures of the spendable incomes (after paying taxes) of persons with incomes of over £250 a year show a drop of about 30 per cent between 1929 and 1932. On the other hand, expenditure by such persons on consumption goods and services shows a much smaller decline during the depression. "Up to the beginning of 1931," he writes, "they continued spending at practically the 1929 level, although their incomes had heavily diminished. There was then a fairly rapid fall in the level of consumption of about 10 per cent. This level of consumption persisted till the end of 1934, two years after the

¹ So far as hidden reserves are diminished during a depression and increased during recovery and prosperity, changes in the proportion will be even more marked.

² The reports of 2279 companies, issued during 1937, were analysed by the *Economist*, as compared with 1770 companies in 1929.

TABLE VIII
 PERSONS WITH INCOMES OVER £250
 Indices (1929 = 100)

	1929	1930	1931	1932	1933	1934	1935
Spendable Income (after paying taxes)	100	86	74	69	79	84	92
Consumption Expenditure	100*	98	91	91	89	90	99

* Based on last two quarters

Based on Clark, *op cit*, Table 112, and see pp 250-51 for definition and method of construction.

rise in incomes had begun. During 1935 and 1936 there has been a rapid increase in consumption.”¹

The lag referred to between changes in income and expenditure respectively may be the result partly of the lag between the earning and distribution of profits “Consumption” in the quotation refers to expenditure on consumption and, although we have no consumption price index applicable to the richer classes, it is probable that the 10 per cent fall in expenditure would be offset to a considerable extent by lower prices. The possibility must, however, be recognized that a price index applicable to consumption by the richer classes might fall considerably less than the Ministry of Labour cost of living index (which fell by 15 per cent between 1929 and 1933). It may be that many goods and services bought by the richer classes have conventional prices. Again, it has been suggested that, in view of the large expenditure by the rich on personal services, a wage index is more applicable than a retail price index (The various wage indices fell by only 5 per cent during the depression,² although it is doubtful whether this figure has much relevance.) The rich, again, spend a smaller proportion of their income on food, the prices of which showed a relatively large fall between 1929 and 1933. Finally it must be realized that the idea of changes in the volume of consumption of the rich is an even more difficult one than that of changes in “real” working class consumption.

¹ Clark, *op. cit.*, p. 254

² See p 82 below

On the whole we may, perhaps, conclude that consumption by the rich was comparatively well maintained during the depression, and expanded during the recovery, although there are indications that this expansion was somewhat delayed. Whether or not consumption was maintained in this way despite a fall in incomes of the order suggested by Mr. Clark's figures, and to what extent it may have meant "living on capital," need not concern us here.

It is interesting that consumption by the richer classes should have been so well maintained despite the great fall in security values between 1929 and 1932. Certain luxury trades no doubt suffered. Security values fell again during 1937, after a long period from the middle of 1932 during which the tendency had been steadily upwards (although gilt-edged reached their peak about the end of 1934). Despite a continued increase in declared profits, certain luxury trades were badly hit during the latter part of 1937. The Bank of England indices of retail sales showed marked increases between the last quarters of 1936 and 1937 in all the geographical divisions except Central and West End London, where the index showed a decline

TABLE IX
BANK OF ENGLAND INDEX NUMBERS OF RETAIL SALES
Average Daily Sales (1933 = 100)

Last Quarter	London, Central and West End	London, Suburban	Provincial, England and Wales	Scotland	Great Britain
1936	137	140	131	123	133
1937	134	151	142	131	142

4. It seems probable that total real consumption never fell, after 1929, much below the 1929 level. (See Table X, p 33.) It may quite easily have expanded, especially during 1930. In that year employment and prices were falling rapidly, but wages had not yet been much affected and unemployment pay was relatively good. Dividends were probably fairly well maintained, and there appears to have been no fall in expenditure by the

TABLE X
TOTAL CONSUMPTION
Indices (1929 = 100)

	1929	1930	1931	1932	1933	1934	1935	1936	1937
(1) Total Value of Consumption . . .	100	98	95	94	94	97	102	110	118
(2) Prices of Consumption Goods and Services	100	95	93	92	90	90	91	—	—
(3) Cost of Living (Working Class) . . .	100	96	90	88	85	86	87	90	94.5

(1) Based on Clark, *Economic Journal*, June, 1937, "National Income and Outlay," Table 72, and see Chapter VII for definition, method of construction, etc. Index for 1937 based on figures given in *A Commercial Barometer*, published by Messrs. Pritchard, Wood & Partners, Ltd.

(2) Based on Clark, *op cit*, Table 89

(3) Ministry of Labour.

richer classes. During 1931 and 1932 there was probably no further significant expansion. Wages fell, small savings were no doubt exhausted, and unemployment pay became less satisfactory after the changes that followed the crisis of September, 1931. The value of consumption by those in the higher income groups also fell. After 1932 the upward movement was renewed and continued until 1937, when it was checked and probably reversed.¹ These latter developments accompanied a fall in security values, a rapid rise in the cost of living, and a decline in employment during the last few months of the year.

In general, it was possible for working class consumption to be maintained and increased because of the persistence of relatively stable wage rates and large aggregate payments to the unemployed, in the face of rapidly falling prices. The richer

¹ An index of the volume of retail trade, recently compiled by the *Economist*, supports this view, although it must be remembered that the index has inevitable limitations. Its movements suggest that "in the first three months of 1937, the volume of retail trade was still higher than a year earlier, but sales in the second quarter and the third quarter were no higher than during the corresponding months in 1936. In the last quarter, however, the index of the volume of retail turnover actually fell below the figure for the corresponding period of 1936" (*Economist*, 30th April, 1938, p. 243, where the method of construction of the index is also described).

sections, on the other hand, maintained their consumption, at first perhaps by living on profits made during the immediately preceding, and more prosperous, period, and later by a reduction in saving, which may have taken the form of "living on capital." A large part of this reduction in saving was carried out on their behalf by companies, which adopted a liberal dividend policy.

5. The following tables (XI and XII), showing certain particular indices of consumption, rather tend to confirm our general conclusion. The volume of food imports, it is seen (Table XII), increased rapidly between 1928 and 1931 and remained above the 1929 level in every subsequent year. Table XI suggests that the supplies, *per head of the population*, of many foodstuffs were maintained or increased during the depression that followed 1929. The table includes figures for eighteen rather broad categories of food, drink, and tobacco. It covers most of the items in the Ministry of Labour's retail food price index, though in less detail, and includes as well figures for the consumption of beer, spirits, tobacco, fruit, cocoa, coffee, and poultry. In 1930 the supplies per head of only six out of the eighteen items failed to equal or exceed the supplies per head in 1929. In 1931 only four items failed to reach the 1929 level, and in 1932 eight (two by the narrowest of margins). If we exclude beer and spirits, supplies of both of which fell after 1929, the number of "failures" in 1930, 1931, and 1932 respectively become four, two, and six, out of sixteen. In the case of ten items, supplies per head equalled or exceeded the 1929 level in each of the three succeeding years. The figures, of course, make no allowance for any substitution of inferior qualities that may have occurred, but they do confirm in a general way the conclusion that the consumption of foodstuffs was maintained. Tobacco consumption, also, does not appear to have suffered, although the consumption of alcoholic drinks fell off considerably. The latter movement may have been partly secular. The consumption of beer and spirits per head has fallen steadily during the present century and, although there was some increase during the recovery period, the 1936 figures were considerably below those for 1929.¹

¹ See the *Economist*, 26th March, 1938, for a discussion.

Table XII shows that employment in the distributive trades expanded steadily throughout the depression, and it is doubtful whether this would have happened in the face of declining consumption. It is interesting to note, however, that employment in these trades expanded far less rapidly during the recovery, and this may denote an excessive expansion during the depression.

Certain indices of "luxury" consumption rose throughout the period. The rate of growth in the number of wireless sets in use was accelerated during the depression years, while there was a steady expansion of employment in laundries, dyeing and dry-cleaning, in hotels, restaurants, etc., and in the entertainments and sports industries. Wireless sets were rapidly becoming cheaper and improving in quality, but the very rapid growth in their use may have been the result partly of lower prices for food and clothing combined with relatively stable wages. Considerable parts of those money incomes that were maintained at something like the pre-depression level must have been set free and spent, to some extent, on "luxuries," many of which were also becoming cheaper. It is held by some that the rise in real wages also provided an important stimulus to increased house-building activity.¹

There was a continuous expansion in the use of such durable consumers' goods as private cars and houses, although after 1929 new sales of cars declined temporarily, and the rate of expansion in the number in use was checked. The same thing is true of telephones. The number of motor cycles in use, on the other hand, declined steadily throughout the whole period from 1929 to 1937, "the chief causes of the decline being the raising of the age limit for driving licences from 14 to 16 years, the high rate charged for compulsory third party insurance, and the publicity given to fatal accidents to this class of road user."² The number of letters, etc., delivered continued to increase, but the use by passengers of the main line railways fell off considerably during the depression.

Some of the series quoted are not completely satisfactory indices of consumption, but they agree in general with our conclusion that consumption was relatively well maintained

¹ See p 432 below.

² P 321 below.

throughout the depression. In the next section it will be shown that employment in the industries producing primarily consumption goods (other than the industries mentioned above) fell only slightly after 1929.

TABLE XI
SUPPLY OF CERTAIN FOODS AND DRINKS AND OF TOBACCO PER
HEAD OF POPULATION

	Unit	1929	1930	1931	1932
1. Beef and veal .	lb	69.3	66.5	63.8	62.2
2 Mutton and lamb	lb	28.6	28.6	30.9	33.7
3 Pigmeat and lard	lb	46.8	47.6	53.6	55.0
4 Fish .	lb	43.8	48.5	45.9	44.9
5 Wheat and flour	lb	343	330	355	340
6 Apples .	lb.	27.8	26.1	22.5	25.4
7 Bananas .	lb	10.6	10.6	11.5	12.3
8 Citrous fruits .	lb	26.4	28.2	29.6	27.0
9. Refined sugar .	lb	89.1	89.6	96.1	91.6
10. Cocoa .	lb	2.82	2.76	2.96	2.81
11. Coffee and chicory .	lb	0.910	0.927	0.941	0.863
12. Tea .	lb	9.3	9.6	10.0	9.8
13 Beer .	gallons proof	16.1	15.7	13.6	11.0
14 Spirits .	gallons	0.277	0.251	0.234	0.211
15 Tobacco .	lb	3.24	3.31	3.27	3.23
16. Milk equivalent of milk, butter, cream, and cheese	gallons	76	79	85	88
17 Eggs .	number	144	153	158	149
18. Poultry .	lb	4.2	4.5	4.8	4.6

Italics denote quantities smaller than in 1929

Sources. 1-15 See *Bank of England Statistical Summary*, February, 1934

16-18. Chapters on Agriculture in Part II.

Items 3-15 refer to United Kingdom, items 1, 2, 16 to Great Britain.

Figures for items 1 and 2 refer to year ended the following 31st May.

5 Expressed as grain

6, 8 Excluding imports of pulp and preserved fruit.

10 And preparations thereof

13 Home production (which forms the bulk of the supply) calculated at a standard gravity of 1055°.

B. ANALYSIS BY INDUSTRIES

I. EMPLOYMENT

The Ministry of Labour figures of employment among persons insured against unemployment form the chief source of information regarding the course of employment in the various industries.

TABLE XII
INDICES OF CONSUMPTION

	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937
Index	101	105	106	—	—	—	—	—	—	—
"	—	—	100	108	104	102	103	102	105	—
"	—	—	100	108	104	102	103	102	105	—
Thousands	1523	1574	1608	1655	1709	1751	1782	1800	182	103
Wireless receiving licences issued during year beginning 1st April ¹	2730	3091	3647	4620	5497	6260	7012	7618	8131	1870
Laundries, dyeing and dry-cleaning employment	124	129	130	134	135	139	141	141	155	163
Hotel, public house, restaurant, boarding-house, club, etc., service-employment	289	304	302	314	315	332	346	358	368	379
Entertainments, sport, etc.—employment	62	66	65	73	78	86	91	97	107	116
Private cars in use—September	901	998	1075	1104	1149	1227	1334	1505	1675	1834
New registrations of private cars—year ended 30th September	161	169	156	144	146	182	220	272	302	327
Motor cycles in use—September	721	740	733	633	606	568	553	521	510	492
Telephone stations at 31st March	1644	1768	1896	1996	2069	2137	2225	2388	2579	2827
Letters, printed papers, newspapers, and post cards delivered (year beginning 1st April)	6230	6400	6475	6540	6640	6753 ²	6935 ³	7345 ³	7690 ²	—
Main line railways—passenger-journeys number	1187	1187	1101	1097	1069	1084	1128	—	—	—
Main line railways—passenger-journeys average length	—	15.78	15.34	—	15.13	—	16.65	—	—	—

All series refer to the United Kingdom, except 12 and 13 which refer to Great Britain

Sources 1 *Board of Trade Journal*

2, 4, 5, 6 See Table XIV

3, 10, 11 Statistical Abstract for the United Kingdom

7, 8, 9, 12, 13 Relevant chapters in Part II and in *Britain in Depression*

With yearly renewal of licences the number in force at end of year is very nearly equal to the number issued during the year
Inclusive of sample packets, reintroduced in May, 1932

It must be stressed at the outset that these figures should be interpreted with caution. In the first place, a large body of persons not insured against unemployment is excluded. Secondly, the classification is, in general, "industrial" rather than "occupational." Thus clerical and distributive workers employed in a manufacturing industry will appear under that industry, and not under the relevant "service" industry. Road transport workers employed by firms engaged primarily in retail or wholesale trade will appear under the distributive trades and not under road transport. Those employed in contracting work may appear under either "public works contracting" or "local government service."¹ Despite these difficulties, however, the figures may be used fairly safely to illustrate broad tendencies.

1929-37. A brief description will first be given of the main trends over the whole period 1929-37. During this period there was an increase of 12 or 13 per cent in the number of insured persons in employment, but it is possible that the proportionate increase would appear somewhat smaller if uninsured persons were included (See page 7.) Given any reasonable definition of employment it seems fairly safe to think of an increase over the whole period of between, say, 8 and 13 per cent. This estimate is sufficiently accurate for the purposes of this section.

The table on p. 39 shows the changes that have taken place in employment in the various main industrial groups into which the Ministry of Labour figures are classified. Figures relating to agriculture are also given.

There has been an absolute decrease in employment in the extractive industries (mining, quarrying, and agriculture). Employment in the manufacturing industries has increased at roughly the same rate as total employment, possibly slightly more slowly, while employment in the building and contracting, and in what are sometimes called the "service," industries (5-9) has increased relatively to total employment. As a result, the proportion of insured persons employed in manufacturing, building, and contracting has remained about the same, at well

¹ For a discussion of these points, see the Minutes of Evidence taken before the Royal Commission on the Geographical Distribution of the Industrial Population. Tenth day. Evidence submitted by Mr. Humbert Wolfe, Ministry of Labour. Questions 2464-81.

TABLE XIII
INSURED PERSONS IN EMPLOYMENT (AGED 16-64)
(June)

Industry Group	Numbers in Employment (Thousands)		Increase (+) Decrease (-) 1929-37	
	1929	1937	Thou- sands	Per cent
1 Fishing	26	28	+ 2	+ 11
2 Mining and Quarrying	968	794	- 174	- 18
3 Manufacturing	5,394	5,948	+ 554	+ 10
4 Building and Public Works Contracting	890	1,119	+ 229	+ 26
5 Transport and Distribution	2,286	2,693	+ 407	+ 18
6 Gas, Water, and Electricity Supply	153	203	+ 50	+ 32
7 Miscellaneous Services ¹	626	835	+ 209	+ 33
8 Commerce, Banking, Insurance, Finance	223	260	+ 37	+ 17
9 National and Local Govern- ment Services	365	446	+ 81	+ 22
All Industries and Services	10,931	12,327 ³	+ 1396	+ 13
Agriculture ²	888	741	- 147	- 17

	Employment as Percentage of All Insured Employment	
	1929	1937 ³
Mining and Quarrying	8.9	6.4
Manufacturing, Building, and Con- tracting	57.5	57.3
"Service" Industries (5-9)	33.4	36.0

Ministry of Labour Gazette

¹ Including hotel, boarding-house, etc., services; professional services, laundries, dyeing and dry cleaning, and entertainments, sports, etc.

² All employees in Great Britain on holdings of more than one acre on one day in June. Ministry of Agriculture, etc.

³ Excluding agricultural workers, who first became insurable against unemployment in May, 1936.

over one-half, although if a wider definition of employment were taken this proportion would be smaller. The proportion employed in the extractive industries has declined, while the proportion engaged in the "service" industries has increased to about 36 per cent of all insured employment. This analysis, it must be emphasized again, is based on an industrial classification, and gives no direct information as to changes in the relative importance of different occupations. The suggestion of the figures that the transport and distribution group has shown a relative increase is possibly misleading. Allowance must be made for a considerable decline in the employment of permanent railway workers (who are not included in the figures),¹ and it is doubtful whether, even after allowing for any increase in the number of road transport workers classified under other industries, the transport and distribution group has done more than keep pace with the growth of employment as a whole.

A more detailed study is necessary of the course of employment in the various industries. In Table XIV these are classified into three main groups. (See also Diagram V.) "Declining" industries are those in which employment has declined between 1929 and 1937; industries showing a "normal" expansion are those in which employment has increased in something like the same proportion as total employment; while industries showing a "super-normal" expansion are those in which employment has shown a considerable increase relatively to total employment. About three-quarters of insured employment are accounted for in the table (and accompanying diagram) while figures for agriculture and railways are given that do not appear in the Ministry of Labour's statistics of insured employment. The annual figures of employment do not refer to one month only and may be regarded as fairly representative of employment during the year.²

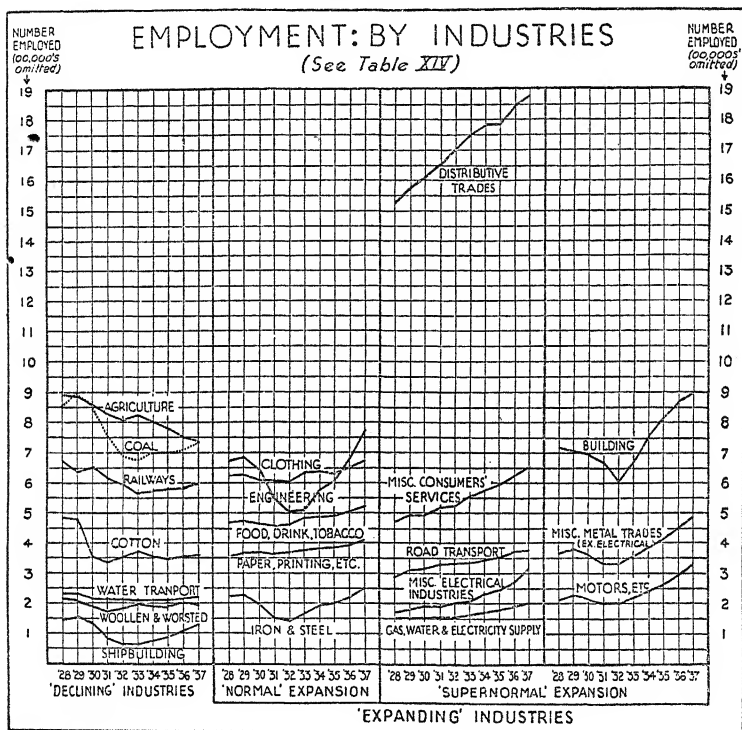
There was a marked decline in employment in three important

¹ Only non-permanent railway workers are insured against unemployment, and so included in the figures. The employment of such workers shows an increase between 1929 and 1937. On the other hand, the more complete employment figures published by the railway companies show a considerable decrease (see Table XIV). These figures are, of course, more comprehensive than the figures of insured employment in other industries and therefore not strictly comparable.

² See note below Table XIV.

industrial groups, namely, textiles (especially cotton), coal-mining, and agriculture. Employment in shipbuilding and ship-repairing (and marine engineering) also fell considerably. The numbers engaged in water transport fell somewhat, the decline being confined to shipping, while the railway companies, as we

DIAGRAM V



have seen, were employing considerably fewer persons in 1937 than in 1929.

Among the industries in which employment expanded absolutely but not relatively to employment as a whole we find three large groups producing primarily consumers' goods, namely, clothing; food, drink, and tobacco; and paper, printing, etc. These three groups were affected relatively little by the depression. Two important heavy industry groups, iron and steel and

TABLE XIV
EMPLOYMENT BY INDUSTRIES
(United Kingdom)

	Numbers Employed (Thousands)			Indices ¹		
				1929 = 100 ²		1932 = 100
	1929	1932 ³	1937	1937	1932	1937
"DECLINING" INDUSTRIES						
1 Cotton	480	359	361	75	75	100
2 Coal-mining	900	680	739	82	77	107
3 Agriculture ⁴	888	809	711 ⁵	83	91	92
4 Shipbuilding and Ship-repairing	155	60	133	80	13	202
5 Railways ⁶	612	598	600	93	93	100
6 Water Transport (Shipping, Dock, Harbour, River, Canal)	231	213	227	97	91	106
7 Woollen and Worsted	206	182	199	97	88	109
"EXPANDING" INDUSTRIES						
(a) "Normal" Expansion						
(i) Little affected by depression						
8 Clothing (including Hosiery)	632	608	675	107	96	111
9 Food, Drink, and Tobacco	471	464	527	111	98	114
10 Paper, Printing, etc.	358	374	414	112	101	111
(ii) Greatly affected by depression						
11 Iron and Steel Manufacture	231	116	255	110	63	175
12 Engineering (including Electrical Engineering)	687	507	779	113	74	154
(b) "Supernormal" Expansion						
(i) Expansion throughout depression						
13 Distributive Trades	1,574	1,709	1,879	119	109	110
14 Road Transport (including Tramway and Omnibus)	311	332	378	122	107	114
15 Miscellaneous Consumers' Services ⁷	499	528	658	132	106	125
16 Gas, Water, and Electricity Supply	152	155	201	132	102	130
17 Miscellaneous Electrical Industries (Engineering, Wiring and Contracting, Cables, Apparatus, Lamps, etc.)	186	202	317	170	109	157
(ii) Decline during depression						
18 Building	705	605	899	128	86	148
19 Miscellaneous Metal Trades (excluding Electrical Trades) ⁸	380	332	490	129	87	147
20 Motor Vehicles, Cycles, and Aircraft	228	199	335	147	87	168
ALL INSURED INDUSTRIES AND SERVICES (excluding Agriculture)	10,805	9,951	12,221	113	92	123

Total insured in July (16-64 only) less average of unemployed in February, May, August, November. No deduction is made for direct participation in trade disputes, sickness, etc. *Bank of England Statistical Summary*, December, 1937. *Ministry of Labour Gazette*

Employment in the industries selected (excluding agriculture and railways) represented over three-quarters of all insured employment in 1929

¹ These indices, being calculated from the approximate figures in the first three columns, are subject to a small error

² Number of workers employed on agricultural holdings of more than one acre, in *Great Britain*, on one day in June. *Ministry of Agriculture*, etc.

³ Total number of persons employed by the railway companies of *Great Britain* in one week in March. The totals comprise all those receiving salaries or wages for the full week in question, together with the equivalent number of full-time workers in cases where employees were paid for less than the complete week. The figures include those employed in ancillary businesses, comprising canal, dock, quay, and marine staff, motor omnibus and passenger road vehicles staff, and hotel, refreshment-room, dining car, and laundry staff. *Ministry of Transport*

⁴ Hotel, public house, restaurant, boarding-house, club, etc., service, laundries, dyeing and dry cleaning, entertainments and sport

⁵ Stove, grate, pipe, etc., and general iron founding, hand tools, cutlery, saws, files; bolts, nuts, screws, rivets, nails, etc.; brass and allied metal wares, heating and ventilating apparatus, watches, clocks, plate, jewellery, etc.; metal industries not separately specified

⁶ Preliminary

engineering, also showed a "normal" expansion over the whole period, although they were severely affected by the depression. The "normal" expansion in the large engineering group, however, conceals a decline in marine engineering and a relatively large expansion in electrical and constructional engineering.

In the distributive trades and in road transport the increase in employment was somewhat greater than the average, the increase in road transport employment being, as we have seen, offset to a large extent by the decline in railway employment. Employment in a group of "luxury" consumers' services (hotels, entertainments, laundries, etc.) showed a large increase. This was especially marked in the case of those classified under "entertainments, sport, etc.," employment in this group increasing by about 75 per cent. There was a marked and important expansion in the building industry and a very rapid growth in the industries specifically connected with electricity, the latter expansion being to some extent dependent on the former.¹ Employment in the motor vehicles, cycles, and aircraft group increased by nearly 50 per cent, and finally we find a considerable expansion in a group of miscellaneous metal trades. This group includes certain industries connected with building which showed a marked expansion, notably those producing stoves, grates, pipes, etc., and heating and ventilating apparatus. It includes also a large group of "metal industries not separately specified," employment in which increased rapidly. This may possibly represent an increase in the production of "new" commodities.

The most striking features of the period suggested by the available statistics are, on the one hand, the decline in several old-established industries, notably cotton, coal-mining, and agriculture. On the other hand, we find a rapid expansion in those industries connected with building, the motor vehicle, electricity, and recreation.

1929-32. The year 1932 was, we may assume, the trough of the depression, and it is therefore convenient to consider first the period from 1929 to 1932, and then the recovery period from 1932 to 1937. The fall in employment during the first three years was highly selective. Employment actually rose in twenty

¹ See p 273

out of the ninety-nine industries distinguished in the Ministry of Labour figures,¹ the total increase in employment in these industries being about 300,000. The consumers' goods industries, so far as we can easily distinguish them, were relatively little affected by the depression. Employment declined only slightly in the clothing and food industries, and remained about the same in the paper and printing group. In many of the important consumers' services there was at the most a check in the rate of expansion. This is true, for example, of the hotel group, of laundries, entertainments, road passenger transport, and the distributive trades. In the last group, indeed, employment actually increased more rapidly between 1929 and 1932 than during the subsequent recovery period. The electrical industries, also, appear on the whole to have expanded, despite a decline in electrical engineering. Finally, there was a marked rise in public works contracting and local government service (especially between 1929 and 1931).

The effects of the depression were most marked, first, in the heavy industry groups, iron and steel, engineering and shipbuilding. The first two groups were subsequently successful, as we have seen, in staging a full recovery, while shipbuilding, in which employment fell by nearly 60 per cent, failed to recover to the 1929 level. Secondly, we find a severe fall in two of our major "declining" industries, coal-mining and cotton, employment in which subsequently showed little recovery. Employment in this group of five large industries fell between 1929 and 1932 by about 28 per cent as compared with a fall of only 8 per cent in all insured employment. The whole group accounted for only 22 per cent of all insured employment in 1929, yet between 1929 and 1932 employment in the group fell by as much as 700,000 as against a *net* decline of about 850,000 in all industries, and a *gross* decline of considerably less than 1¼ millions. (By "gross decline" is meant the total decline in all the seventy-nine industries, distinguished by the Ministry of Labour, that showed a fall in employment.) Considerable declines in building, textiles other than cotton, and in the motor and miscellaneous

¹ In presenting certain statistics, other than employment figures, the Ministry of Labour further subdivides a small number of these industries.

metals groups account for a further quarter of a million of the gross decline. These figures illustrate clearly the selective nature of the incidence of depression. The analysis is necessarily far from detailed, but it is believed that the broad impression gained is correct.

1932-37. During this period the only important industry to show a continued decline in employment was agriculture, but, of the other "declining" industries, coal-mining, cotton, and railways all failed to recover significantly. What improvement there was in coal-mining employment came mostly at the end of the period. Other textile industries showed some recovery, but barely regained the 1929 level of employment.

Employment in the industries producing primarily consumption goods and services, so far as they can be distinguished, expanded less rapidly than total insured employment, which increased by nearly one-quarter. This is true of the clothing, food, and paper groups, of the distributive trades, and of road transport of both passengers and goods. Employment in the distributive trades actually increased less quickly than during the period 1929-32, and the proportionate increase between 1932 and 1937 was not much greater than in coal-mining. In the "luxury" services group (hotels, laundries, entertainments, etc.), the proportionate increase in employment was about the same as in all insured employment. It is noteworthy, however, that employment in the entertainments and sports group (and in the industries manufacturing toys, games, and sports requisites) increased by between 40 and 50 per cent.

The expansion was most marked, first, in the heavy industries which were so badly hit by the depression, iron and steel, engineering and shipbuilding. Secondly, we find a rapid expansion in the building, motor, electrical, and miscellaneous metals groups (the expansion in the last group being associated to a large extent with the building boom). Employment in all those industries (Numbers 4, 11, 12, 17, 18, 19, 20 in the table) formed only one-fifth of all insured employment in 1932. Their expansion between 1932 and 1937, however, represented one-half of the total increase in insured employment.

The expansion in employment during the recovery period was

thus very unevenly distributed, just as the decline during the earlier period was highly selective. Over the whole period the most violent fluctuations were apparent in the three heavy industrial groups—a severe fall followed by a rapid recovery. These groups were accompanied in their downward plunge by coal and cotton (two of the major declining industries) and in their recovery by several of the rapidly expanding industries, notably those connected with building, motors and aircraft, electricity and entertainment.

The importance of the part played by the building expansion in the general recovery movement is fully discussed in the chapter on building in Part II of this book. In view, however, of the importance of the subject it may be permissible to deal further with it in this section. Certain figures given in Part II will be utilized.

Employment in the building industry throughout the period constituted only 6 to $7\frac{1}{2}$ per cent of all insured employment. This proportion, however, gives a false impression of the contribution of building to the recovery. The increase in building employment alone represented 13 per cent of the total increase in insured employment between 1932 and 1937, and as much as 20 per cent of the increase between 1932 and 1935. The effect of increased purchases of building materials on employment is more difficult to assess, but we may perhaps assume that the cost of materials used in building is something like one and a half times the labour cost.¹ It is maintained, moreover, that a change in house-building activity has a particularly rapid and widespread effect on other industries, especially as "the materials used are almost entirely obtained from, and manufactured in, this country."² Finally, it is improbable that there were large stocks of materials available in the early stages of the building boom.³ For these

¹ Sir Harold Bellman suggests (on p. 407) that in the building of a *house* the cost of labour and materials respectively are in the ratio 38 : 62 (or 100 : 163). The figures relating to firms in the building and contracting trades that furnished returns of wages in connection with the 1930 Census of Production show a ratio of 100 : 154 between (a) wages and (b) the cost of materials used and amount paid for work given out. For 1924, however, on the basis of the estimated wage bill for that year given in the General Report of the 1930 Census (p. 105), the corresponding ratio is considerably lower, at 100 : 137.

² P. 409, and see p. 408 for a fuller discussion.

³ P. 407.

reasons it seems likely that a comparatively large proportion of the value of the materials required for the increase in building activity must have been disbursed fairly quickly in wages, and so have increased employment. If we assumed that one-third was so disbursed (and this does not seem unreasonable),¹ it would follow that the increase in building employment was associated more or less directly with an increase perhaps half as large in industries connected with building materials. In other words, the increase in employment in building and the industries most directly affected may have represented 30 per cent of the total increase in insured employment between 1932 and 1935. It is of course impossible to trace the full effects of the increased purchases of materials, or to measure the various time-lags involved—every industry may be said to be affected in some degree—but it is suggested that this figure of 30 per cent gives a very rough idea of the relative importance of the increased employment, between 1932 and 1935, that might be fairly easily attributed to the expansion in building activity.

It is obvious that new houses have to be furnished and fitted, and if we included the industries affected the contribution of

¹ This is a very rough estimate of a somewhat nebulous quantity! The following data relate to firms in a small selection of trades associated with building materials that made returns of wages in connection with the 1930 Census of Production, and are given for what they are worth in the present context (Some of the firms in one group no doubt prepared the raw materials of firms in other groups) The figures do not tell us a great deal, and must be interpreted with caution, but they do suggest that one-third of the money spent on additional materials may well have been disbursed in wages at a fairly early stage in its journey

Trade	Percentage of Gross Output	
	Wages Paid	Cost of Materials and Work Given Out
Brick and Fireclay . . .	42	29
Cement . . .	20	40
Building Materials* . . .	30	44
Slate Mines and Quarries . . .	58	6
Wall-paper . . .	18	42

See p 163 of Part IV of Final Report for definition, etc

the building expansion to the total increase in employment would be even greater. Finally, if we take into account the indirect effect of the increased spending power that results from an increase in employment, it will be seen that the building boom must have played a very considerable part in the first three years, at least, of the recovery. This general conclusion seems to hold good, although the calculations are exceedingly primitive. They are intended, first, to illustrate some of the difficulties of a satisfactory quantitative analysis, and, secondly, to serve as a rough check on an alternative analysis that will be made below.

The following table illustrates the importance of building in another way—

TABLE XV
(GROSS) VALUE OF OUTPUT OF CAPITAL GOODS
(Million £'s)

	1929	1932	1935
All Capital Goods	558	496	633
All Building (including Repair Work but excluding Contracting)	243	226	307.5
<i>As percentage of all capital goods</i>	44	46	49
New Dwelling-houses	85.5	81	145
<i>As percentage of all building</i>	35	36	47

Calculated from Clark, *op cit*, Table 81.

(See Clark, Chapter VIII, for definitions, etc.)

It suggests that the value of all building (including repair work) represents between 40 and 50 per cent of the total value of all capital goods produced. Building is thus seen to be extremely important, in view of the general belief that recovery in the capital goods industries normally forms the main stimulus to general recovery. It should be noticed, however, that the output of new dwelling-houses represented only about one-third of the total building output in 1929 and 1932, and less than one-half in 1935. Nevertheless, the housing boom alone appears to have

been responsible for nearly one-half of the increase in the total annual output of capital goods between 1932 and 1935

The effects of an increase in building activity are obviously widespread, and it is very difficult to measure them accurately, even if the stimulus to increased consumption that results from a rise in employment be excluded. Sir Harold Bellman, in his analysis, makes use of the classification of industries associated with building adopted by the Building Industries National Council. It is, he admits,¹ fairly wide. A study of the list of industries (given in Appendix II, p. 436), reveals that it includes all four of the industries classified by the Ministry of Labour as specifically connected with electricity.² It includes, also, many of the industries connected with the raw materials used in the production of motor cars, as will be seen by a study of the table given by Mr. Duval in the chapter on the motor industry.³ Changes in employment in the industries chosen by the Council will therefore reflect changes, not only in the building industry, but also in the motor car and electrical industries, and in many other industries. Column D of the table on p. 50 shows the course of employment in a group of industries which includes the building, motor car, and electrical industries, and probably most of those affected to a greater or less degree by them. It will be noted that employment in the industries classified as associated with building moves rather more in line with employment as a whole than with employment in the building industry. This is especially true of the changes between 1936 and 1937.

Whatever the merits of this particular selection of industries, it is true that, although they accounted for only about one-fifth of total insured employment in 1932, they contributed approximately one-half of the total increase in employment in each of the first three recovery years (June, 1932–June, 1935). As far as building alone is concerned, we may perhaps assume that at least one-half of the increase in employment during these years, in industries classified as associated with building (excluding

¹ P. 409

² Electrical wiring and contracting; electrical engineering, electric cables, apparatus, lamps, etc., and gas, water, and electricity supply

³ (P. 310), viz. iron and steel, brass and copper, glass, paints, rubber, wire, timber

TABLE XVI
EMPLOYMENT IN CERTAIN INDUSTRIES
(June of each year)
(Thousands)

	A BUILDING		B INDUSTRIES ASSOCIATED WITH BUILDING, ETC. ¹		C MOTOR VEHICLES, CYCLES, AND AIRCRAFT		D ALL SELECTED INDUSTRIES (A + B + C)		E ALL INDUSTRIES (INSURED)	
	Number Employed	Annual Increase	Number Employed	Annual Increase	Number Employed	Annual Increase	Number Employed	Annual Increase	Number Employed	Annual Increase
1932	633.4	—	1138.4	—	196.3	—	1968.1	—	9,965.2	—
1933	708.3	75	1230.1	92	217.6	21	2150.0	188	10,384.9	420
1934	789.9	82	1351.6	122	242.7	25	2384.2	228	10,835.6	451
1935	843.6	54	1393.4	42	259.3	17	2496.3	112	11,054.0	218
1936	910.7	67	1499.1	106	294.3	35	2704.1	208	11,031.2	577
1937	927.3	17	1646.0	147	336.9	43	2910.2	206	12,326.8	696

¹ Including electrical industries. See the chapter on Building in Part II, Table 3, and Appendix II for a list of the industries covered.

building itself), may be attributed to the building boom. On this assumption the building expansion was responsible for nearly one-third of the total increase in employment during each of the first three years of the recovery, before allowing for any indirect stimulus to consumption that may have resulted from increased employment. This roughly confirms our previous estimate.

The industries selected in this way include most of those that expanded rapidly between 1932 and 1935. The only important industries in the Ministry of Labour's classification that expanded more rapidly than the selected industries as a whole (27 per cent) are as follows: (a) constructional engineering, which is connected with building, (b) shipbuilding and marine engineering which, as the following table suggests, are probably not so important as building, or even as house-building, (c) entertainments and sports, toys, games, and sports requisites.

TABLE XVII

(GROSS) OUTPUT OF SHIPS (Million £s)		
1929	1932	1935
59	25	38

Calculated from Clark, *op cit*, Table 81.

The figures are certainly consistent with, even if they do not confirm, the hypothesis that building, together with the motor car, electrical, and recreation industries, played a large part in the first three years of recovery. Building alone is seen to have played a very large part. The expansion in building activity, moreover, was highly selective, especially in 1933 and, to a lesser extent, in 1934, being mainly confined to house-building. This is shown in some detail in the chapter on Building. House-building thus played a large part in the early stages of recovery, although the direct employment involved represents a small fraction of total employment ¹

¹ The erection of 200,000 houses, it is estimated, "provided work for about one-quarter of the building industry" (p. 411), while employment in the building industry as a whole represented only 6 to 7 per cent of all insured employment.

During the last two years of the recovery period the selected industries, as a whole, made a smaller proportionate contribution to the total increase in employment. It is difficult to draw any conclusion, but this result agrees with the hypothesis that the rate of expansion in building slackened, while certain other industries expanded even more rapidly than before. This is true of the iron and steel and other metal industries, of engineering and shipbuilding, of the electrical industries, and of the motor, cycle, and aircraft group. A considerable part of the large increase in employment in this last group was associated with expanding aircraft production. It was officially stated, at the beginning of 1938, that the number of persons employed in the aircraft industry had increased from 30,000 in 1935 to roughly 90,000.¹ There can be little doubt that many of the other rapidly expanding industries just mentioned received their main stimulus from the rearmament programme, although it is impossible to measure its effect.²

Employment in all the industries mentioned in the middle of the last paragraph³ increased by as much as 26 per cent between 1935 and 1937. This compares with an increase of only 8 per cent in all other insured employment. Employment in the selected group of industries represented only 16 per cent of all insured employment in 1935, but contributed 38 per cent of the total increase in insured employment between 1935 and 1937.

The evidence suggests that building activity played a large part in the first three years of the recovery, and that house-building was particularly important during the earlier period. The last two years saw a more rapid expansion in total employment than any other time during the whole recovery period, and

¹ Memorandum by the Secretary of State for Air to accompany Air Estimates, 1938 Cmd 5677.

² Some idea of the order of magnitude of the rearmament programme may be obtained from the fact that total defence expenditure was £125 million greater in the financial year 1937-8 than in 1935-6, two years earlier. This figure may be compared with estimated increases of approximately £80 million and £140 million in the gross annual output of building and of all capital goods respectively between 1932 and 1935, a period of three years. (See Table XV.)

³ Viz iron, steel, and other metals, engineering, shipbuilding, electrical, motor, cycle, and aircraft.

building seems to have played a less important part in this advance. Rearmament was no doubt the predominant factor.

II PRODUCTION

I

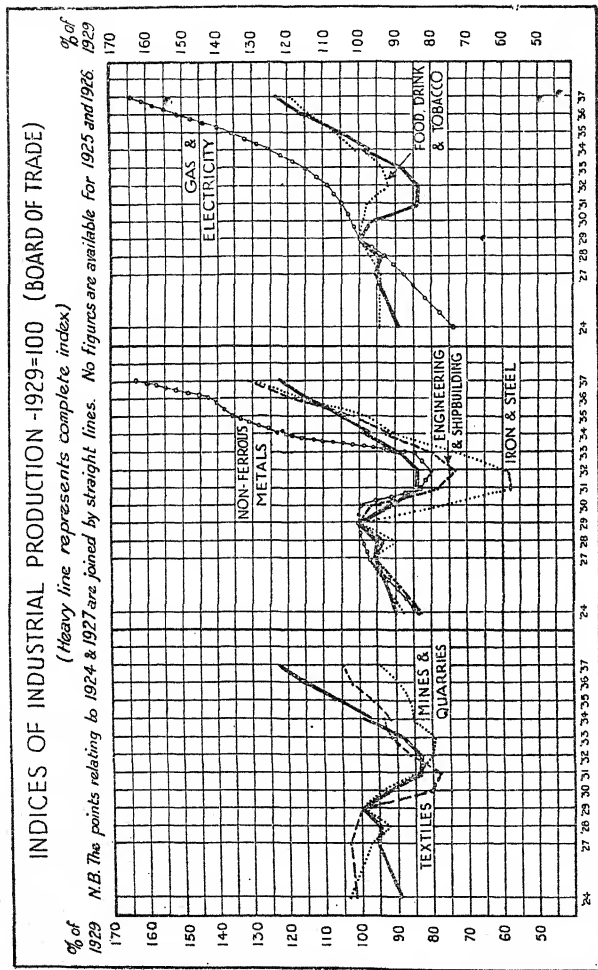
In the accompanying diagrams are presented the Board of Trade indices of production together with certain other commonly quoted indices of activity. They tell much the same story as the employment figures. Broad comparisons may be made between the Board of Trade sub-indices for the various industrial groups and the general index of production, but it must be remembered that the latter index is itself not completely representative of the whole national output. In particular, as has been shown in the first section, the fall in the Board of Trade index between 1929 and 1932 was greater than the fall in the whole national output, largely because the index takes no account of the "output" of various consumers' services which expanded steadily throughout the period. It must also be remembered that the movements of indices of production conceal divergent movements in the constituent series.

In this section we shall discuss briefly the indices illustrated in the diagrams and certain other statistics of production and activity. Attention will be drawn to the incomplete and unsatisfactory nature of some of the indices, while certain conclusions reached by the authors of chapters in Part II of this book will be quoted.

II

I. DECLINING INDUSTRIES. We shall discuss first our three major "declining" industries. The output of mines and quarries failed, according to the Board of Trade index, to regain the 1929 level, despite the stimulus given to certain types of mining and quarrying by the building boom, the expansion in iron and steel production, etc. The output of coal, by far the most important mineral produced, was somewhat lower in 1937 than in 1929, and the general downward tendency of the post-war period from 1923 was thus continued. The decline, however, was much less

DIAGRAM VI



Series I. 1924-34.

The Board of Trade indices for the years 1924-34 (base 1924 = 100) have been converted to a base 1929 = 100.

Series II. 1934-7.

The Board of Trade indices for the years 1930 and 1934-7 (base 1930 = 100) have been converted to 1930 bases equal to the corresponding 1930 indices in Series I.

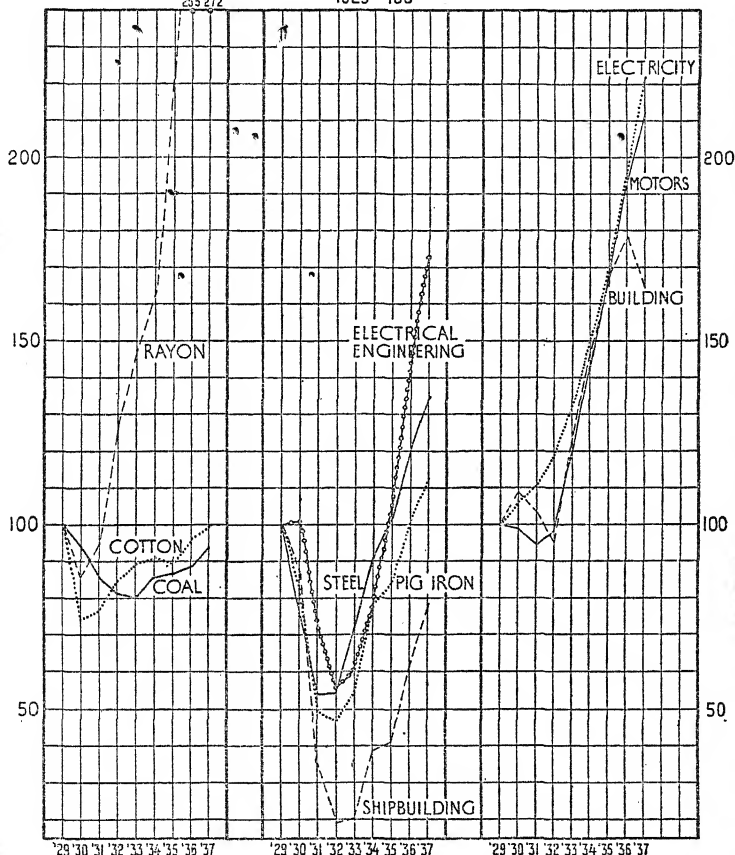
Full descriptions of the method of construction of the two index numbers are given in the *Board of Trade Journal*, 26th July, 1938, and 28th March, 1935.

Weighting is based on the results of the 1924 and 1930 Censuses of Production respectively, and there are certain other differences in the methods of construction. Of the branches of trade not covered in either index the most important are the clothing trade (other than boots and shoes) and public utility services other than gas and electricity, while the earlier index does not cover building.

DIAGRAM VII

INDICES OF OUTPUT AND ACTIVITY

1929 = 100



Source: Board of Trade Journal—Unless otherwise stated.

United Kingdom—Unless otherwise stated.

Based on averages of monthly or quarterly figures of following quantities and indices—

Coal—tons of saleable coal raised.

Cotton—lb. of raw cotton delivered to mills.

Rayon—lb. of yarn and waste produced.

Steel—tons of crude steel produced.

Pig iron—tons produced.

Shipbuilding—gross tonnage of merchant vessels under construction at end of each quarter (including tonnage on which work was suspended).

Electrical Engineering—B.E.A.M.A. index of new orders.

Electricity—units of electricity generated by authorized undertakings—G.B. 1937 index based on first three quarters.

Motors—No. of vehicles produced—year ended 30th September—S.M.M. & T. Ltd.

Building—Economist index of building activity (see text for method of construction)—G.15

marked in output than in employment. The annual output per person employed (including clerks and salaried persons) declined from 270 tons in 1929 to 253 in 1931, but subsequently increased steadily to 298 tons in 1936. The fall in output per person employed during the depression was partly the result of short-time working. Output per man shift showed only a very small decline from 21.69 cwt in 1929 to 21.62 cwt in 1931 (despite a reduction, in some of the coal-fields, in the length of the shift), and subsequently increased steadily to 23.54 cwt in 1936 and 23.33 cwt in 1937 (provisional).¹

As will be seen from the following table, the decline in coal output was entirely due to the contraction in international trade.

TABLE XVIII
COAL (Million Tons)

	Output	Shipped Abroad (Including Bunkers) ²	Home Consumption ³
1929	258	82	173.5
1930	244	75	167
1931	219	62	156
1932	209	57	149.5
1933	207	57	148
1934	221	57	161
1935	222	56	164
1936	228	50	176
1937	241	56	183
1929-37	- 17	- 26	+ 9

¹ No attempt is made to explain this rise in output per head.

² Including coal equivalent of coke and manufactured fuel.

³ These particulars relate to Great Britain only, the necessary adjustments having been made in respect of shipments to Northern Ireland.

Source: Annual Reports on Mines and Quarries, issued by the Mines Department. (The 1937 figures are taken from the *Board of Trade Journal*, and are provisional.)

The quantity of coal shipped abroad (including bunker coal) fell severely between 1929 and 1932 and failed to show any subsequent recovery (the revival in 1937 being from the particularly low level of 1936, when the export trade was affected by sanctions against Italy). Home consumption, on the other hand, which showed an equal absolute fall, but a much smaller relative fall, between 1929 and 1932, recovered considerably from the depression level and increased over the whole period by some 9 million tons. This increase, however, failed to offset the decline in exports and bunkers.

2 The index of production for the textile industries was somewhat higher in 1937 than in 1929, but declined relatively to the general index. So far as any meaning may be attached to the statement, we may say that the output of textile goods was approximately the same in 1937 as in the pre-depression years. The index of raw cotton consumption suggests a recovery in the cotton industry to the 1929 level, but this index is misleading. "In 1936 and 1937, although production of cotton yarn was rather greater than in 1929, production of cotton and rayon piece goods was only about three-quarters of the production of 1929."¹ Thus, despite the enormous growth in the importance of rayon, the increase in the production of cloth made wholly or partly of rayon failed to offset the decline in cotton piece goods. As in the case of coal, the decline in the cotton industry may be attributed largely to the contraction in exports. "In 1936, home demand for cotton goods . . . was probably rather greater than in 1929."² Exports of cotton piece goods, on the other hand, failed to recover significantly from the depression level, and in 1936 and 1937 were little more than half in quantity of the exports of 1929.³ (See Table XIX.)

In both the coal and cotton industries the recovery was limited, and almost entirely confined to the home market. Over the whole period, however, the home market failed to expand sufficiently to offset the contraction in the export trade. These facts, together with a definite increase in output per head in coal-mining, largely explain the failure of employment in

¹ See p. 447 below.

² See p. 446 below.

³ Exports of cotton yarn recovered more nearly to the 1929 level.

TABLE XIX
EXPORTS OF UNITED KINGDOM PRODUCE AND MANUFACTURES

	Coal (Million Tons)	Iron, Steel, and Manu- factures Thereof (Million Tons)	Cotton Yarn (Million lb)	Cotton Piece Goods (Million sq yds)	Woollen and Worsted Issues (Million sq yds)	Motor Vehicles (Thousands)
1929	60 3	4 38	166 6	3672	1555	42 0
1930	54 9	3 16	137 0	2407	113 8	29 8
1931	42.7	1 98	133 5	1710	86 1	24 3
1932	38 9	1 89	141 5	2197	81 8	40 2
1933	39 1	1 92	135 1	2031	94 2	51 7
1934	39 7	2 22	130 4	1994	102 2	57 6
1935	38 7	2 31	141 7	1948	109 7	68 2
1936	34.5	2 20	150 9	1917	118 0	81 7
1937	40 4	2 58	159 1	1922	122 8	98 5

either of the two industries to recover significantly from the depression level

3 We have seen that agricultural employment declined steadily between 1929 and 1937. The total acreage of arable land (and indeed of all cultivated land), which had fallen for many years, also continued to fall throughout the period. The London and Cambridge Economic Service index of agricultural production, on the other hand, after falling from 112.1 in 1929 (1924 = 100) to 100.3 in 1931, subsequently rose fairly steadily to 118.8 in 1937. There were indeed notable expansions in certain branches, despite the general decline in acreage and employment. The continuous decline in wheat acreage and production was arrested after 1931. Stimulated by the provisions of the Wheat Act, 1932, acreage increased by nearly one-half between the record low year of 1931 and 1934, and subsequently declined only slightly. Sugar beet production, which is indirectly subsidized, also showed a substantial expansion over the whole period. The pig industry expanded rapidly under the stimulus of special measures. "The milk industry, because of some features of the demand for milk, and because of the operation of the marketing schemes, enjoyed relative stability during the depression. Producers increased and then began to take steps to improve their

output."¹ The number of dairy cattle and the estimated production of milk increased fairly steadily

The general long term tendency towards a contraction in acreage and employment was thus continued throughout the period, but certain branches of agriculture expanded, largely as a result of legislative measures. These measures helped to check the downward trend, and to restore a certain degree of prosperity to farming. Mr. Orwin writes of arable farming as follows. "At the beginning of the decade, the plight of arable farming was serious. Except for the sugar beet crop, market prices for almost everything were below production costs, and there was every indication of a wholesale abandonment of arable farming such as had not been seen since the great depression at the end of last century. To-day, as a result of subsidies, tariffs, import regulations, and control of home production, it may be said that ploughland farming is enjoying a period of prosperity, combined with the prospect of security, such as it has not known within living memory."²

4. CONSUMPTION GOODS INDUSTRIES. The Board of Trade index of production for the food, drink and tobacco group showed a relatively small decline during the depression and rose over the whole period in approximately the same proportion as the general index. These movements are roughly in agreement with changes in employment. Unfortunately there is no separate Board of Trade index for the paper and printing or clothing groups, but the indices that are available suggest that the fall in output in the industries producing primarily consumers' goods, although possibly greater than the fall in employment, was relatively small.³

5. HEAVY INDUSTRIES. The indices shown illustrate in a striking manner the severe fall in activity in the heavy industries

¹ See p. 196 below

² See p. 173 below

³ The Board of Trade index for leather, boots and shoes is not shown in the diagram. It is not representative of the clothing industry, and moreover the earlier index (1924-34) includes rubber goods. It may be noted, however, that the index fell from 1927 to 1929 but was hardly affected by the subsequent general depression, the index for 1932 being only 2 per cent below the 1929 figure.

The L.C.E.S. index of production for the paper group fell by some 1.4 per cent between 1929 and 1931 but had recovered by 1932 to the 1929 level.

after 1929 and the rapid nature of the recovery movement. Shipbuilding nearly reached a standstill during 1932 and 1933. At the end of 1929, 156 million gross tons of merchant vessels were under construction. Three years later, at the end of 1932, the gross tonnage under construction had fallen by 85 per cent to 0.23 million.¹ The index of shipbuilding activity given refers to merchant vessels only and therefore fails to show the extent of the recovery in the industry as a whole. Naval construction expanded rapidly during the last three years of the period, the tonnage building at successive dates being as follows—²

<i>Jan 1</i>		<i>Thousand Tons</i>
1935	.	139
1936	.	282
1937	.	376
1938	.	547

6. Changes in output in the iron and steel industry were also violent. Both the employment and the production figures suggest that the iron and steel industry advanced, over the whole period, in line with industry as a whole. This advance was achieved despite a very limited recovery in the export trade from the depression level. (See Table XIX.) In contrast to the coal and cotton industries the iron and steel industry was thus able to offset a marked decline in exports by a large expansion in production for a protected home market.

7. The Board of Trade index of production for the engineering and shipbuilding industries covers a wide field, including motor vehicle production, which declined relatively little after 1929, and shipbuilding and marine engineering, which, as we have seen, suffered a catastrophic fall. The complete index for the group is thus of doubtful value, as indeed are some of the other indices for a similar reason. The movements of the index of activity in the electrical engineering industry are discussed below.

8. RAPIDLY EXPANDING INDUSTRIES. The indices illustrate

¹ If we exclude vessels on which work was suspended the fall is even more marked, and the gross tonnage under construction at the end of 1932 appears to have been less than 0.1 million. See *B E S S*, April, 1938, p. 50, for a useful diagram.

² Statement Relating to Defence (White Paper), March, 1938 Cmd. 5682.

well the rapid expansion that has taken place in three industries that have been already picked out in the previous section, namely, the building, electrical, and motor industries. Building was not included in the earlier Board of Trade index of production (for the years 1924-34), but an index for the building materials and building industries is available for the years 1930 and 1934-37. The movements of the annual index for this group of industries, and of the complete index, are shown below

TABLE XX
BOARD OF TRADE INDICES OF PRODUCTION

	Building Materials and Building	Complete Index
1930	100	100
1934	133	106
1935	147	114
1936	157	125
1937	153	133

The index for building materials and building (which covers only about 30 per cent of the industries concerned) illustrates clearly the great increase in output between 1930 and 1935. The figures also suggest that building played a less important part during the last two years of the period. The building index rose less between 1935 and 1936 than the complete index, and actually showed a fall between 1936 and 1937. The *Economist* index of building activity also suggests that the rate of expansion slowed up between 1935 and 1936 and then turned into a decline. This index is not, however, completely satisfactory. It is based on the Ministry of Labour figures of the value of building plans approved by 146 local authorities ¹. Figures are not included either for the London area or for government contracts, and it is believed that government orders, in connection with the defence programme, were of considerable importance during the latter years of the period, and may have offset any decline in other

¹ A twelve months' moving average is calculated and the series is corrected for changes in building costs. Considerably less than one-half of the population of Great Britain lives under the 146 local authorities.

types of building. There was certainly an increase in employment between 1936 and 1937 in both the building and public works contracting industries, although the increase in building employment was much less marked than in previous years. Even after general business activity had begun to decline towards the end of 1937, building and contracting activity was maintained. The *Economist* wrote, on 26th March, 1938, that "with the exception of the coal and metal trades, there is no major branch of industry in which activity has declined so little as in building and contracting." We may perhaps conclude that the rate of expansion of building activity slowed down towards the end of the recovery period while general business activity was increasing more quickly than at any previous time. Building thus played a less important part during this later period, but it is doubtful whether activity actually declined.

9. The post-war expansion in motor car production was checked during the depression, although the decline in output was small.¹ After 1932, the advance was again resumed, and in 1937 more than twice as many motor vehicles were produced as in 1929, although it should be pointed out that the proportion of small private cars (up to 10 h.p.) produced was very much greater.

The motor car industry was one of the few in which exports expanded over the period. The total number of vehicles exported more than doubled between 1929 and 1937, while the total value of exports increased by nearly one-half. An early recovery in exports after the abandonment of the gold standard enabled total output in the year ended 30th September, 1932, to exceed the output of the previous year despite a fall in production for the home market. Exports expanded steadily throughout the recovery period, but after 1932 the main market for the rapidly increasing output was at home.

10. The Board of Trade index for the gas and electricity group rose rapidly from 1924 to 1937. During the depression there was merely a slowing down of the rate of increase. The rapid rise after 1929 may be largely attributed to electricity.² The output

¹ The chart given in the chapter on the motor industry illustrates some of the points discussed in this paragraph.

² For a discussion, see the *Economist*, 1st and 8th January, 1958.

of gas rose relatively little during this period, while the output of electricity by authorized undertakings increased by about 120 per cent between 1929 and 1937, although the increase in total output was somewhat smaller.¹

The B E A M A index of new orders in the electrical engineering industry showed a marked rise over the whole period, but fell severely after 1929. Employment, on the other hand, in what is classified by the Ministry of Labour as the electrical engineering industry declined relatively little. It is pointed out, moreover, in the chapter on the electrical industry in Part II, that the greater part of the expenditure involved in the erection of the Grid was allocated during the slump years, 1930-33, and that this helped to maintain a fairly steady level of activity.

11. Finally, it may be noted that the Board of Trade index of production in the non-ferrous metals industries, having fallen by some 20 per cent between 1929 and 1932, rose extremely rapidly during the recovery, and showed a very marked advance over the whole period. This movement may no doubt be largely explained by the close association² of these industries with the building, electrical, and motor car industries, and with armament work.

III

The indices of output and activity tell much the same story as the employment indices. We have seen in addition, in this section, some of the reasons for the decline in the coal-mining and cotton industries. Both suffered from a severe contraction in the export trade, while output per head increased considerably in coal-mining.³ Other important exporting industries, including iron and steel, appear to have succeeded in regaining their pre-depression position in the national economy, despite a marked fall in exports, as a result of a large increase in production for a protected home market. Both the electrical⁴ and the motor car industries have been able to expand their export trade between

¹ See Table A in appendix to chapter on Electrical Industry

² See Chapter XII in *Britain in Depression* for some details

³ No attempt is made to measure the changes in output per head in any of the other industries.

⁴ See p. 274 below

1929 and 1937, the increase in motor car exports being particularly marked, but the main expansion has been in the home market.

IV

1937-38 The decline in activity that began in the autumn of 1937 was not entirely general. In some industries, such as building and contracting, engineering and shipbuilding, the length of the time-lag between the placing of contracts and their completion helped to maintain activity. In the building and contracting trades, for example, the unemployment figures suggest that a high level of activity was still being maintained during the spring of 1938, despite a continued decline in the value of building plans passed. The published figures, however, exclude Government contracts, which probably helped to maintain activity. In the shipbuilding industry, the figures of tonnage commenced (which relate to merchant vessels only) reached a peak of 368 thousand tons during the second quarter of 1937, and thereafter fell sharply to 173 thousand tons in the first quarter of 1938, as compared with 253 thousand tons a year earlier. The fall in activity, on the other hand, was much less violent, and the tonnage building at the end of the first quarter of 1938 was still greater than at the same date a year earlier.¹

In some industries output was maintained by making for stock. Activity in the iron and steel industry expanded steadily throughout 1937, and until the end of the year there was a severe shortage of supplies. During the first quarter of 1938, however, exports and home consumption were declining, while imports were increasing, and output was maintained at a high level only at the expense of a heavy accumulation of stocks. During the early months of 1938 there were signs of a decline, and the output of both iron and steel in April, 1938, was actually lower than in April, 1937. In the tinplate branch of the industry, which is dependent to a large extent on the export trade, there was a severe decline in activity which began towards the end of 1937.

Turning to consumption goods we find that the motor car

¹ But see pp 354-5

industry, which produces the luxury durable consumers' good *par excellence*, was one of the first to feel the effects of the recession.¹ The very rapid expansion from 1932 came to an end during the latter part of 1937, and throughout the first half of the year beginning October, 1937, the output of private cars was running at a level about 10 per cent lower than in the previous year. In the consumption goods industries as a whole the movements in the unemployment figures during the last quarter of 1937 and the first quarter of 1938 compared unfavourably with similar movements in previous years, and some evidence is thus provided in support of the belief that consumption reached its peak in the spring or summer of 1937.² In many cases, however, the decline was relatively slight (and indeed much less marked than in the iron and steel and other metal industries), although the slump was severe in textiles, which are so largely dependent on international trade. The development in the export trade in general is clearly shown by the movements of the Board of Trade index of volume. The index failed to show the usual seasonal increase between the third and fourth quarters of 1937, while the fall between the last quarter of 1937 and the first quarter of 1938 cannot be wholly explained by seasonal influences. Coal-mining, however, was less affected than most industries by the general decline in business activity.

The long time-lag in certain industries between the placing of orders and their completion, and also the possibility of making for stock, render somewhat difficult any general conclusions. The main impression gained, however, is that industries connected with rearmament work were relatively little affected by the recession, and this, together with the time-lag mentioned above, no doubt helps to explain the maintenance of a fair level of activity in many of the heavy and constructional industries. The consumption goods industries, and especially those making luxury and durable goods, seem to have been among the first affected, and this fact may perhaps be associated with the check to the expansion of consumption which appears to have occurred

¹ It is interesting to note that the volume of furniture sales, according to the index compiled by the Retail Distributors' Association, also declined markedly during the latter half of 1937.

² See pp. 28 and 33 above.

during the spring and summer of 1937 Industries closely connected with the export market, and especially textiles, suffered in general severely, coal-mining being an important exception

C PRICES AND WAGES

I WHOLESALE PRICES

I. INTRODUCTORY. An attempt will be made in this section to give a general picture of wholesale price movements during the period under review. The main movements in the various more comprehensive price indices are, in general, the same as regards the direction and order of magnitude of change. That this is true of changes from year to year is apparent from a study of the accompanying diagram (VIII), although it would appear that the more comprehensive Board of Trade indices have fluctuated somewhat less widely than the others. A more detailed sample study suggests that the movements from month to month do not usually show great divergences.

The following discussion will be based largely on movements in the official Board of Trade index and sub-indices, although reference will be made to movements in other indices. The Board of Trade index is the most representative, being based on changes in the prices of 200 commodities, as against about 100, 75, 58, and 45 in the case of *The Times*, *Financial Times*, *Economist*, and *Statist* indices respectively.¹ The Board of Trade, moreover, publishes sub-indices which are the most useful for the purposes of this survey.

It is perhaps desirable to emphasize at the beginning the obvious fact that price indices show average changes in prices. Movements in the prices of the various items show wide divergences, as is demonstrated by the table given on p. 68.

¹ See Special Memorandum No. 61 of the London and Cambridge Economic Service (issued by the Royal Economic Society) by Mr. K. C. Smith for brief descriptions of these index numbers.

A full description of the "old" Board of Trade index (see Diagram IX, Chart A) will be found in the *Journal of the Royal Statistical Society* for March, 1921, and a description of the "new" index and sub-indices (see Charts B to F in Diagram IX) in the *Supplement to the Board of Trade Journal*, 24th January, 1935.

DIAGRAM VIII

ANNUAL INDICES OF WHOLESALE COMMODITY PRICES (Ratio Scale)

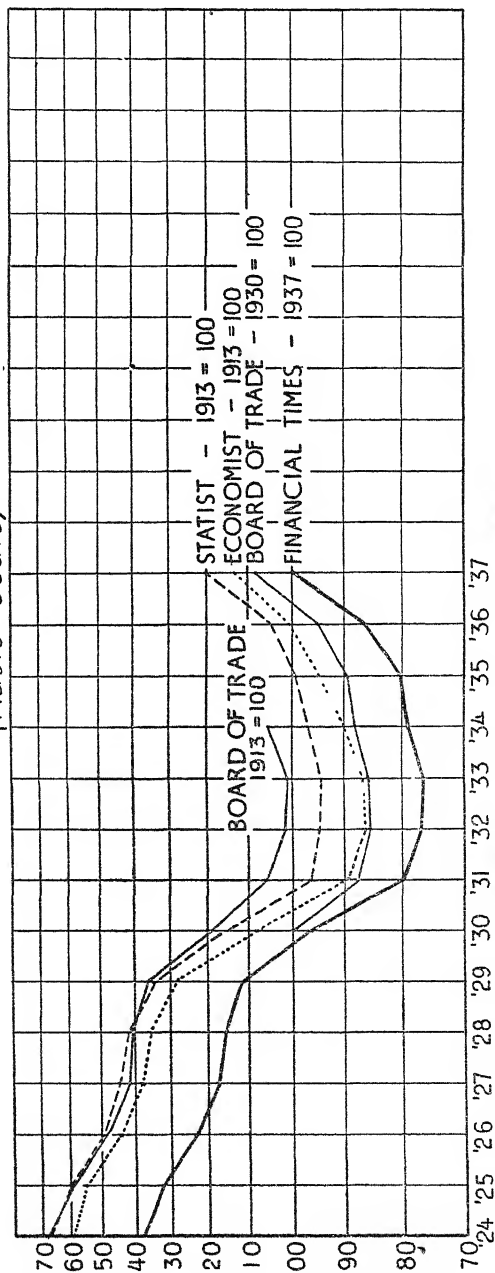


TABLE XXI
THE "ECONOMIST" INDEX OF WHOLESALE PRICES
(58 items)

	PERCENTAGE CHANGE IN PRICE OF ITEMS SHOW- ING THE GREATEST PERCENTAGE	
	Increase	Decrease
Between 5th April, 1933, and 3rd Jan, 1934	+ 106	- 25
„ 2nd Jan, 1934, and 2nd Jan, 1935	+ 83	- 39
„ 2nd Jan, 1935, and 1st Jan, 1936	+ 86	- 19
„ end Dec, 1935, and end Dec, 1936	+ 67	- 27
„ end Dec, 1936, and end Dec, 1937	+ 38	- 57

This survey will be concerned, in the main, with general movements, and only some of the more outstanding divergences will be noted. For more detailed discussions of changes in the prices of particular commodities the reader is referred to the relevant chapters in Part II of this book and of *Britain in Depression*.

2 CHRONOLOGY. The fall in prices from 1924, which was checked to some extent in 1927 and 1928, was resumed in 1929, and in the last quarter of that year began a very sharp fall which was continued until September, 1931, when this country left the gold standard. (See Diagram IX, Chart A.) The fall was relatively small in the index for manufactured articles, greater in the index for intermediate products, and still greater in the index for basic industrial materials. (See Diagram IX, Chart C.) A sharp rise in the index followed the abandonment by this country of the gold standard in September, 1931. The rise proved, however, to be merely temporary. Prices fell again during the first half of 1932 in sympathy with world movements, and by the middle of the year the index had fallen again slightly below the low level reached in September, 1931, before the abandonment of the gold standard.¹ A slight general recovery

¹ The monthly index is based on average prices during the month, and the index for September, 1931, thus indicates a level of prices somewhat higher than that obtaining in the week before this country left the gold standard.

in August and September followed the Lausanne agreements, but was not maintained, and prices fell steadily again until the spring of 1933 when the Board of Trade index touched its lowest point of 82.7 in March, 1933, as against 83.1 in June and July, 1932, and 84.2 in September, 1931.

The downward fall in prices was thus definitely checked in this country in September, 1931, when we went off gold. From then until the beginning of 1933 there was no significant net fall in sterling prices,¹ while gold prices and prices in the countries that maintained the gold standard continued to fall. The following table, showing the Bank of England indices of *primary* commodity prices for certain dates, illustrates this point—

TABLE XXII
BANK OF ENGLAND
INDEX OF PRICES OF FIFTEEN PRIMARY COMMODITIES ²

	Week Ended		
	19th Sept, 1931	11th June, 1932	7th Jan, 1933
U K sterling .	100	96	105
U K gold ³	100	72	72
U S dollar .	100	77	79

¹ The lowest points touched by the Board of Trade, *Statist*, and *Economist* monthly indices in 1931, 1932, and 1933 are shown below—

	1931		1932		1933	
	Aug.	Sept.	June	July	Mar	April
	84.3 79.1 85.7	84.2	83.1 77.0 80.9	83.1	82.7 77.0 81.6	82.8

The *Statist* and *Economist* indices refer to the end of the month, while the Board of Trade index is based on average prices during the month.

² *Foods* Wheat, Maize, Sugar, Bacon, Tea (U K), Coffee (U S A).

Metals Copper, Iron, Lead, Silver, Tin

Other Industrial Materials Cotton, Hides, Linseed, Rubber, Wool

³ Calculated by use of the French Franc exchange rate

DIAGRAM IX

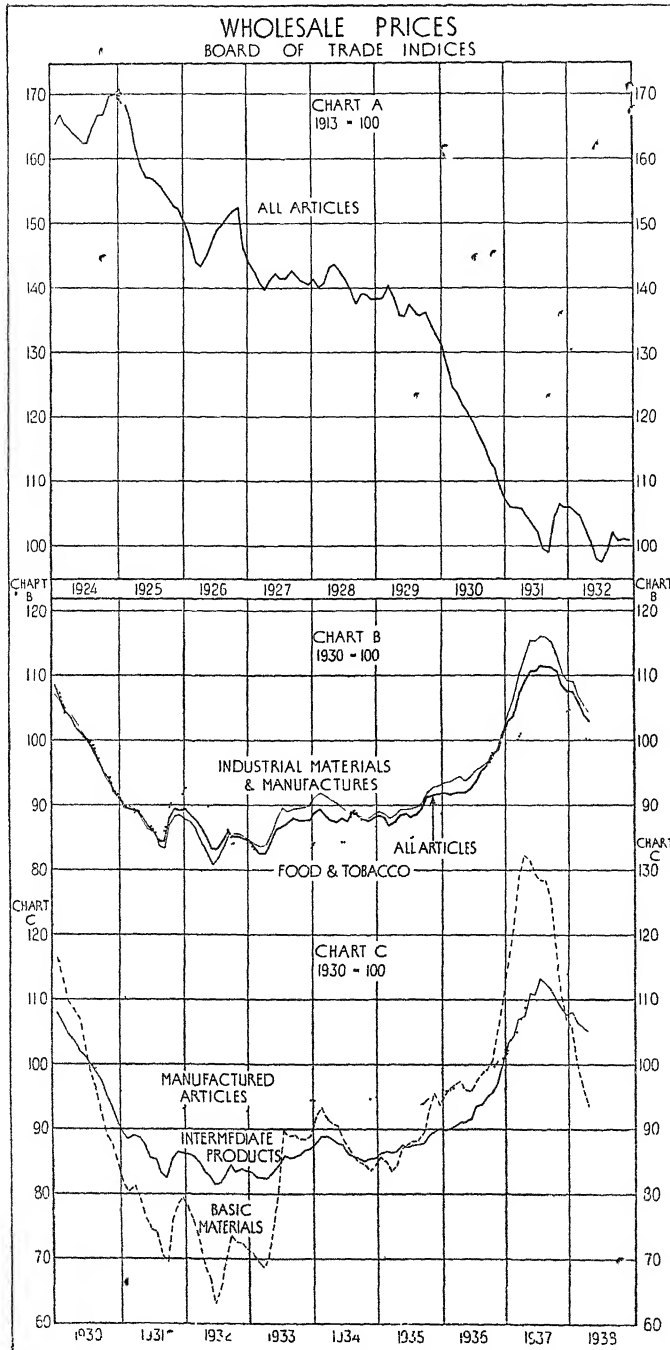
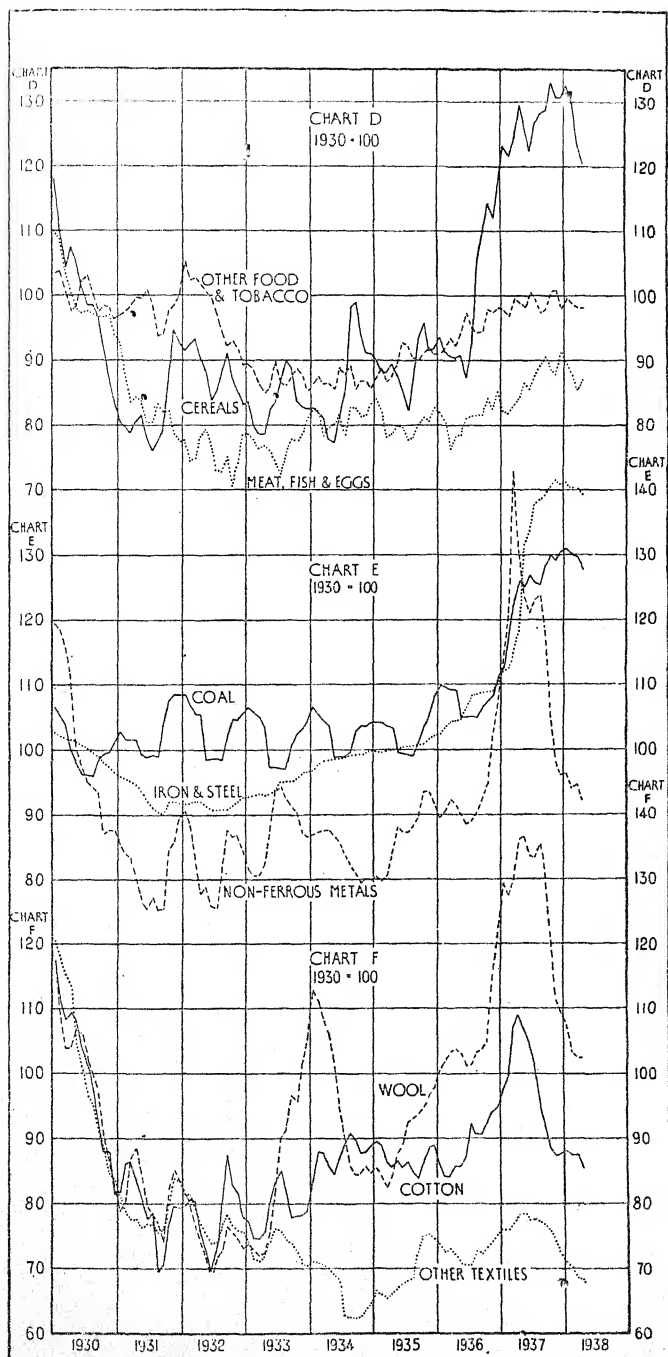


DIAGRAM IX (contd.)



More comprehensive price indices for the United States, France, and Germany show a similar, though less marked, fall between September, 1931, and the beginning of 1933.

The beginning of the general upward trend may perhaps be dated from the spring of 1933, but it should be noted that in the case of most industrial raw materials and manufactured articles the lowest point was reached in the middle of 1932 (or, in some cases, in the autumn of 1931). This is true of the composite index for industrial materials and manufactures, of each of the three sub-indices—basic materials, intermediate products and manufactured articles—and of five out of the eight other sub-indices into which the index for industrial materials and manufactures is divided.¹ Recovery in the prices of foodstuffs, on the other hand, began in general later. The composite index for food and tobacco reached its lowest point in April, 1933, and was only very slightly higher a year later, in May, 1934. Turning to the sub-indices we find, indeed, that the index of the prices of cereals reached its lowest point in July, 1931, but after a jump at the end of that year it declined steadily until May, 1934, when it was only very slightly above the figure for July, 1931. In the "meat, fish, and eggs" group the lowest point was touched at the end of 1932, but in the "other food and tobacco" group there was little recovery until the end of 1934. We may therefore make the tentative generalization that prices of foodstuffs recovered later than other prices. This generalization is, on the whole, borne out by a study of individual prices, although there are, of course, notable exceptions, as in the case of tea and bacon.²

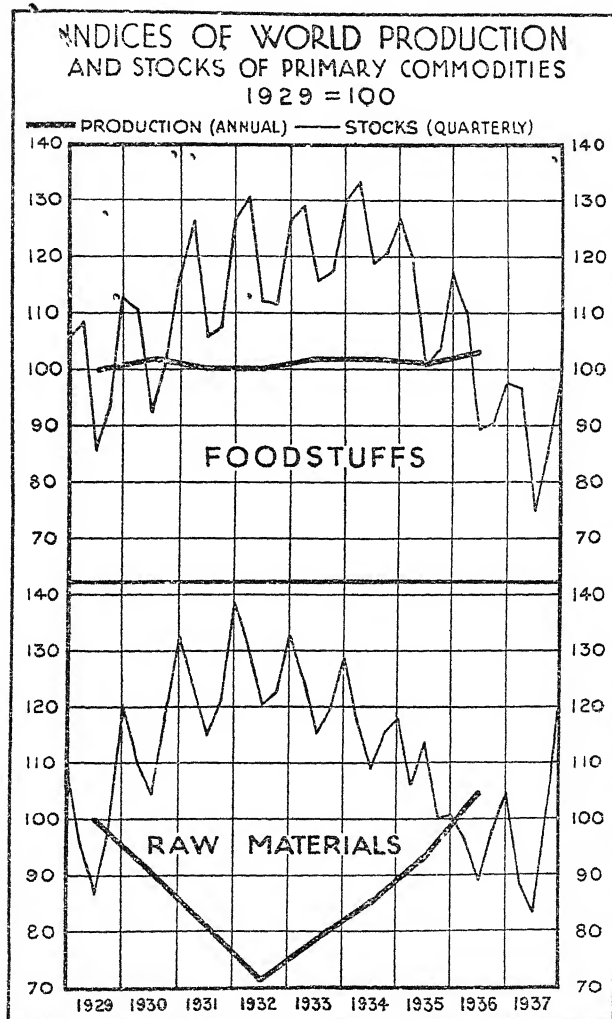
In this connection it is interesting to compare the League of Nations index numbers of world production and stocks of raw materials and foodstuffs respectively. These are shown in the accompanying diagram.³ It would appear that, while the output of

¹ It is not true of the "coal," "other textiles," or "chemicals and oils" groups, but is true of the "miscellaneous" group. (The indices for the two last groups are not shown in the diagrams)

² The quarterly index numbers of average values of retained imports show a marked recovery in the raw materials group from the beginning of 1933, while the index for the food, drink, and tobacco group failed to recover until 1934.

³ The scope of the indices of stocks is much less comprehensive than that of the production indices, but they are "as comparable as is feasible in the present state of statistical information" (*World Production and Prices*, 1936-7, p. 9.)

DIAGRAM X



foodstuffs remained virtually stable throughout the period, that of raw materials fell off sharply between 1929 and 1932. Stocks of raw materials began to decline quite markedly in 1932, while stocks of foodstuffs continued to rise until two years later.

These facts help to explain the late recovery in the prices of foodstuffs.

1933. The general recovery in prices during 1933 from the low spring level was most marked in the basic industrial materials group. Notable rises were recorded in rubber, wool, and tin prices, while food prices were less affected. An important exception was tea, the price of which was raised by artificial restriction. The rise in prices accompanied a marked improvement in the American industrial position. During this period, moreover, the dollar was rapidly depreciating, and the Bank of England index of dollar prices of primary commodities rose from 85.5 in the week ended 15th April to 134.6 three months later, in the week ended 15th July, but subsequently fell off somewhat during the second half of the year.

1934. The comparative stability of the Board of Trade general index during 1934 masks a fall in the prices of certain raw materials, which was offset by a rise in food prices. The prices of most non-ferrous metals, with the exception of tin, fell considerably from their peak in the middle of 1933 to the end of 1934. This fall accompanied a recession in industrial activity in the United States. The price of wool also fell sharply. Among foodstuffs, we find a marked rise in the cereals group. Advances in the prices of wheat, oats, maize, and rice followed smaller world crops. Several other food prices showed marked rises on the year.

1935. During 1935 the general index rose, and the rise was accelerated in the autumn when the Italo-Abyssinian war and the application of sanctions led to fears of a shortage of certain commodities. Prices in the non-ferrous metals and wool groups recovered again during the year.

1936-37. About the middle of 1936 the general index took a sharp upward turn, and a very rapid rise began, which continued for about a year. By the end of 1935, as is shown in the diagram, stocks of primary commodities had been greatly reduced from the abnormal depression levels. 1936 was a year of rapid recovery in many countries, including the United States. The devaluation of the gold bloc currencies in September was followed by a very marked improvement during the last quarter in France, Holland,

and Switzerland¹ Stocks of commodities were further reduced. By the autumn, according to the *Economist*, "surplus stocks had been eliminated, and the rapid expansion of demand had practically eliminated idle capacity."² A speculative boom, encouraged by prospects of heavy rearmament expenditure, began. The rise in the price of cereals began in the summer. Most other primary commodity prices followed in the autumn. Meanwhile the index for manufactured articles, which had risen only slightly from the end of 1931 to the end of 1935, began to rise markedly during 1936 and bounded upwards during the first few months of 1937. The elimination of surplus capacity, higher prices of raw materials, and shortages of labour in certain industries and districts, had their effect. The Ministry of Labour wage index, which had fallen from 98½ in the third quarter of 1929 to a low point of 94 in 1933—a fall of only 4½ points—had recovered only to 96 by the end of 1935. During the next two years, however, the rise was rapid—to 100 in the first quarter of 1937 and 103½ in the last.

The index for basic materials reached its highest point in April, 1937, and began to fall rapidly in the autumn. The production of certain primary commodities had been stimulated by the rise in prices, and it became clear that a shortage of supplies was improbable. By the end of September, 1937, the index of stocks of raw materials (but not of foodstuffs) was again higher than a year earlier. By that time, moreover, it became clear that there had been a severe check to the recovery movement in many countries. Signs of a recession in activity were already apparent in the United States.

"In the light of events it is evident that the upward movement was by no means free of speculative influences which profoundly affected the later trends."³ In the spring the American authorities took steps to check the inflationary boom. It was announced in February that the reserve requirements of member banks would

¹ According to the Editor of the *Statist*, "it is not to be counted a coincidence that the devaluation of the former gold bloc currencies immediately preceded the sharp rise in prices, for these over-valued currencies had exercised a deflationary pull on the price level" (*J R S S*, 1937, Part II).

² *Economist*, 9th January, 1937, p. 53.

³ *Financial Times*, 3rd January, 1938. "Annual Finance and Stock Market Review."

be raised. On 2nd April, a statement was made by President Roosevelt to the effect that commodity speculation was attaining dangerous dimensions and that prices were too high. The Government, he stated, would spend less on durable goods and more on consumers' goods. A sharp check was administered to the rise in prices. A rumour spread, first in April and later in June, that the dollar price of gold was to be reduced, also had a depressing effect on markets, which were further affected by rumours of war.

The fall was most severe in non-ferrous metals, textiles, and rubber. Food prices, on the other hand, continued in general to rise throughout the year (although the prices of certain foodstuffs, such as cocoa, suffered a severe setback). The index of world stocks of foodstuffs at the end of 1937 was approximately the same as a year earlier, while the index for raw materials had jumped back to the 1934 level. Prices in the coal, iron, and steel groups, which had risen very rapidly during the first quarter of 1937, were maintained and increased. The index for manufactured articles, which had continued to rise for some months after the prices of basic materials had begun to fall, fell only slightly during the latter months of the year, despite a severe fall in the prices of raw materials. The steady increase in retail prices throughout 1937 may be partly explained by the absence of any significant decline in the wholesale prices of foodstuffs or manufactured articles.

The fall in prices during the latter part of 1937 was thus confined to certain commodities, notably industrial raw materials, although the rise in most other prices was, sooner or later, checked.

3. CONCLUSION. The general picture is one of falling prices until September, 1931, in which month certain prices touched their lowest point. Many other prices, however, and particularly those of foodstuffs, were destined to fall still lower.

It is impossible to define any turning point, but it may be noted that the Board of Trade general index reached its lowest level in the spring of 1933. From then until the middle of 1936 the general tendency was definitely upwards, although the rise was comparatively gradual. The rapid rise that began in the second half of 1936 was general, but the subsequent fall during

1937 was to a large extent selective, being confined largely to the prices of industrial raw materials.

The prices of manufactured articles in general remained comparatively stable throughout the period, except during the first half of 1937 when they rose rapidly. On the other hand we find violent fluctuations in the prices of most primary commodities.¹ Many schemes of control were in operation. "It is worth remembering," stated the *Economist* at the beginning of 1936,² "that there are now restriction schemes of one kind or another affecting tin, rubber, tea, copper, lead, tinsplates, wheat, sugar, silk, jute, and nitrate." Despite the existence of these schemes, only a few of the commodities mentioned escaped a severe fall in price during 1937.

II COST OF LIVING

The Ministry of Labour index of the cost of living for working class families is shown in the accompanying diagram, together with the indices for its main constituent groups.³ The complete index fell rapidly during 1930 and 1931, the seasonal rise in the second half of each year being less than normal. The fall was continued until 1933, and the rise may perhaps be dated from the beginning of 1934, when (on 1st March) the index was for the first time higher than at the same date in the previous year. The rise was at first gentle, but became more marked towards the end of 1935. In 1936 the seasonal fall in the first half of the year was less than normal and in 1937 it was completely absent. The rise continued until November, 1937, but was largely seasonal in the second part of the year, the index showing a rise approximately the same as in 1933.⁴ At the beginning of 1938 there was a seasonal fall. There can be little doubt that the main force of the real upward movement was spent by the middle of 1937.

¹ A series of useful charts, showing movements in the prices of fourteen important primary commodities from 1927 to 1938, may be found in the *Economist* for 11th June, 1938.

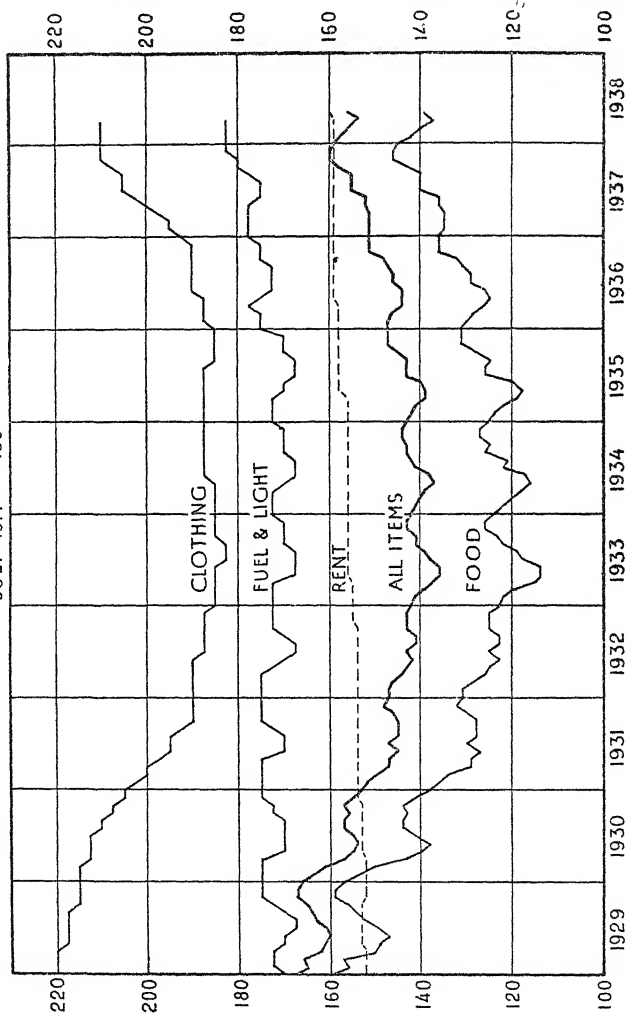
² 11th January, 1936.

³ The index for the "other items" group is not shown.

⁴ The Ministry of Labour index (converted to a 1924 base) rose from 87 at 1st June to 91½ at 1st November, but with the normal seasonal change removed (according to the L C E S) the index was the same at both dates (89).

DIAGRAM XI

COST OF LIVING
(Ministry of Labour Indices)
 JULY 1914 = 100



Food is given a weight of 3 out of 5 in the cost of living index,¹ and this helps to explain the supposed time-lag between changes in wholesale and retail prices. It helps to explain the continued fall in the cost of living from 1931 to 1933, after the wholesale price index had ceased to fall significantly, and the apparently late rise in the cost of living. Wholesale food prices, as we have seen, fell considerably between the autumn of 1931 and the spring of 1933, and failed to show any material recovery until 1934. The large weight given to food also helps to explain the continued rise in the cost of living in 1937, after the wholesale price index had begun to fall. Wholesale food prices, we have seen, continued to rise throughout most of that year.²

It may be noted also that the relatively greater fall in wholesale prices from 1929 to 1933, and the relatively greater rise from 1933 to 1937, appear less marked if we compare, not the complete wholesale and cost of living indices, but the indices of wholesale and retail food prices. This is made clear in the following table—

TABLE XXIII
PRICE INDICES

	Change per cent	
	1929-33	1933-37
(1) Wholesale Prices	- 26	+ 22
(2) Cost of Living	- 15	+ 10
(3) Food Prices—Wholesale	- 29	+ 23
(4) Food Prices—Retail	- 22	+ 16

(1) and (3) Board of Trade 1929-33, "old" index "all articles" and "total food" 1933-37, "new" index "all articles" and "total food and tobacco"

(2) and (4) Ministry of Labour

The complete index, as is shown in the diagram, fell considerably less than the food index, because the indices for fuel and light³ and rent remained relatively stable. The latter index rose slowly but steadily from 1924 onwards, while the former

¹ The index is weighted as follows: food, $7\frac{1}{2}$, rent, 2, clothing, $1\frac{1}{2}$, fuel and light, 1, other items, $\frac{1}{2}$

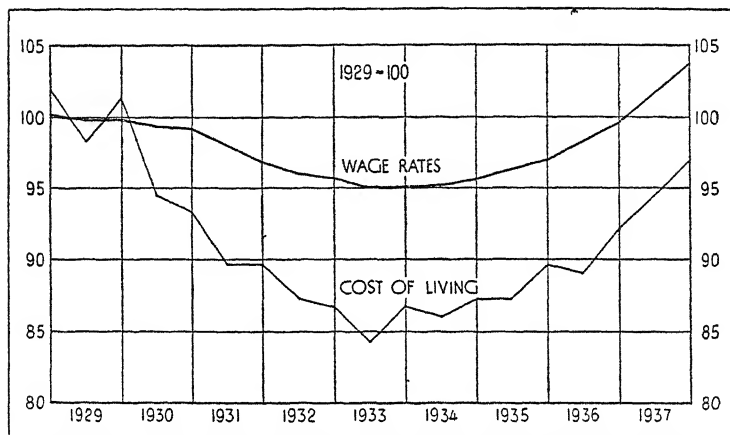
² On the other hand, the downward plunge of wholesale food prices from 1929 certainly appears to have begun sooner than the fall in retail food prices

³ The weights in this group are: 6 for coal, 3 for gas, and 0.7 for oil, candles, and matches together. No weight is given to electricity

was unaffected by the depression and rose during 1936 and 1937. The index for clothing also fell somewhat less than the food index between 1929 and 1933, and showed a rather smaller proportionate rise during the recovery.

Striking movements in the prices of particular foodstuffs¹ include a very rapid fall in the average price of streaky bacon from

DIAGRAM XII



Wage Rates Mr. Ram-bottom's index, 1934 weighting, End of June and December, 1929-34, End of December only, 1935-7, Average of End of December, 1928, End of June and December, 1929, = 100

Cost of Living Ministry of Labour, converted to 1929 base

is. 5½d. per lb. in 1929 to 10d. per lb. in 1932, followed by a marked rise during 1933 to an average price of 1s. 1¾d. in 1934. The price of butter fell markedly from 1s. 10¼d. in 1929 to 11¼d. in 1934, and showed only a moderate recovery during the last three years of the period. Milk prices rose steadily from 1933, but the prices of eggs, sugar, and most types of beef and mutton failed to rise significantly until late in the recovery period.

III WAGES

Four indices of average weekly full-time wage rates are available for the whole period under consideration. These are (a) and

¹ The discussion in this paragraph refers to kinds and qualities of food usually bought by working-class purchasers, being based on the prices used by the Ministry of Labour in compiling its retail food price index. See 22nd *Abstract of Labour Statistics* and *Ministry of Labour Gazette*; and *Bank of England Statistical Summary*, April, 1938, for a useful diagram.

(b) two indices compiled by Mr Ramsbottom of the Ministry of Labour, (c) the official Ministry of Labour index, and (d) Professor Bowley's index. The first two are the most comprehensive. Weights are used approximately proportional to the aggregate weekly full-time wages in each industry (a) in 1924 and (b) at June, 1934, respectively. Index (b) probably represents most faithfully the changes in average full-time weekly rates of wages over the period 1929-37. It is available at less frequent intervals than the indices (c) and (d), but seems to be the most suitable for our present purpose. It is therefore shown in the accompanying diagram, together with the Ministry of Labour cost of living index for the middle and the end of each year. Both indices have been converted to a 1929 base.

It should be emphasized that all the four available indices move closely together. This is evident from a study of the following table—

TABLE XXIV
INDICES OF FULL-TIME WEEKLY WAGE RATES

	MR RAMSBOTTOM		Ministry of Labour Average for 1924 = 100	Professor Bowley Dec, 1924 = 100
	Average for 1924 = 100 (a)	Average for June, 1934 = 100 (b)		
Dec, 1928	98.9	105.3	99	99½
June, 1929	98.7	105.0	99	99½
Dec, 1929	98.6	105.0	98½	99
Dec., 1930	97.9	104.2	98	98½
Dec, 1931	95.7	101.8	95½	96½
Dec, 1932	94.4	100.4	94	94½
June, 1933	93.9	99.8	94	94
Dec, 1933	94.0	99.9	94	94
Dec, 1934	94.4	100.4	95	94½
Dec, 1935	95.6	101.9	96	95½
Dec, 1936	98.6	104.7	99½	98
Dec, 1937	103.1	108.9	103½ ¹	102½

Sources and Descriptions (a) and (b) J R S S, 1935, Part IV, and 1937 Part I, (c) 22nd *Abstract of Labour Statistics* and *Ministry of Labour Gazette*; (d) Memoranda of L.C.E.S. (issued by R.E.S.) (No. 12 for description)

Notes (a) (b), and (c) end of month, (d) middle of month

¹ Last quarter, 1937. An index for end of year would be higher. The index for the first quarter of 1938 was 105½

All four indices fell by approximately 5 per cent between June, 1929, and June, 1933. All rose from June, 1933, to December, 1937, by between 9 and 10 per cent (the rise in index (b) being about 9 per cent). The rise between June, 1929, and December, 1937, was between 3 and $4\frac{1}{2}$ per cent (the index (b) rose by about $3\frac{3}{4}$ per cent). In round numbers we may think of a fall of 5 per cent to 1933, a subsequent rise of 9 per cent to the end of 1937, and a rise of 4 per cent over the whole period.

The index illustrated falls slowly during 1929 and 1930, and much more rapidly during 1931 and 1932 to a low point in 1933. From there it rises, at first slowly, and then at an ever-increasing rate throughout the rest of the period. (The other indices move in roughly the same way,¹ but the Ministry of Labour index appears to show too rapid a rise during 1934 and 1935, and also rather too great a rise during the whole recovery period.) It is obvious from Professor Bowley's index, which is published monthly, that the rise in wages was continued throughout 1937 and the early months of 1938, even after the setback in business had begun. Professor Bowley's index (mid-December, 1924 = 100) moves as follows—

1937		1938	
Middle of		Middle of	
July	100 $\frac{1}{4}$	Jan	102 $\frac{1}{4}$
Aug	101	Feb	103
Sept	101 $\frac{1}{2}$	Mar	103
Oct	102	April	103 $\frac{1}{2}$
Nov	102 $\frac{1}{2}$		
Dec	102 $\frac{3}{4}$		

The cost of living index fell much more between 1929 and 1933 than the wage index, and rose more quickly during the recovery, but it will be seen that during no complete calendar year was the relative rise in the cost of living index very great. Over the whole period the wage index shows a considerable relative rise.

Index numbers, prepared by Mr. Ramsbottom, of full-time weekly wage rates in sixty-five industries, are available for certain dates. These suggest, first, that the fall in wages during the depression was fairly general. Between the end of 1928 and the end of 1932, not one of the sixty-five indices showed a rise, while

¹ See *B E S S*, August, 1937, for a useful diagram showing the Ministry of Labour and Professor Bowley's indices from 1925

only fifteen escaped a fall. The most marked falls were in the textile group, and some of these are shown in Table XXV. It appears also that the rise in wages during the recovery was general. Only eight of the indices failed to rise between the end of 1932 and the end of 1937. Over the whole period between the end of 1928 and the end of 1937, although the general index rose, sixteen of the sixty-five sub-indices fell, while eight more showed no change. The falls were most marked in the textile group, while nearly all the most striking rises were in the coal, metals, engineering, and shipbuilding groups. These are shown in the table, which also illustrates the rapid rise in wages that took place during the last two years of the period.

TABLE XXV
INDEX NUMBERS OF WEEKLY RATES OF WAGES IN THE UNITED
KINGDOM FOR WORKPEOPLE IN FULL EMPLOYMENT IN
CERTAIN INDUSTRIES

Average for Whole Year 1924 = 100

Industry	END OF YEAR				
	1928	1932	1935	1937	1928-37 Change per cent (approx)
Cotton	100	86	84	92	- 8
Woollen and Worsted	100	84	82	89	- 11
Textile Bleaching, Dyeing, and Finishing	96	82	84	91	- 5
Coal-mining	87	84	84	97	+ 15
Iron-mining	92	90	96	121	+ 32
Coke-ovens	89	85	87	105	+ 18
Iron and Steel	92	88	94	112	+ 22
Engineering	104	101	104	113	+ 9
Tinplate	89	88	91	101	+ 13
Tube Manufacture	103	101	105	118	+ 15
Shipbuilding and Repairing	108	108	108	121	+ 12
Complete Index .	98.9	94.4	95.6	103.1	+ 4

Source and Details J R S S, 1935, Part IV, and 1937, Part I

EMPLOYMENT AND UNEMPLOYMENT

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EMPLOYMENT AND UNEMPLOYMENT¹

I

THOUGH the exact definition of "recovery" may vary from economist to economist, it is almost certain that a common criterion would be an increase in the percentage of the working population in employment. Not only does a general rise in this percentage indicate a rise in physical production when the population is increasing or stationary, but it is the most important aspect of business fluctuations from the point of view of human happiness. No one who has had contact with the unemployed or who knows the tragic effects of long unemployment on family life, health, and self-respect can doubt that, even though the measurement of "welfare" may be impossible, the extent to which unemployment is reduced is the only gauge of real recovery if it is to have any meaning for the mass of the population.

II

It will be useful, before going on to discuss the actual course of employment and unemployment during the recovery, to make clear what is meant by "unemployment." A general definition, and one that fits British official statistics, is that a person is unemployed when, though willing to work at the prevailing level of wages in the work for which he is qualified, he cannot find such work. Unemployment can then be subdivided into many categories dependent upon the attributes considered. Thus we may divide it, as Sir William Beveridge has done, according to its cause, into "seasonal unemployment" (due to seasonal factors of weather or fashion), "interval unemployment" (due to passages from one job to another), "structural unemployment" (due to structural changes in industry), and "cyclical unemployment" (due to the trade cycle). Unemployment can also be

¹ The author is very grateful to *Economica* for permission to reproduce certain figures from Sir William Beveridge's article, "An Analysis of Unemployment."

divided according to the length of the period of unemployment, according to the age and sex of the unemployed, and so on.

Having seen what unemployment means, we meet the general problem of measuring it and the specific problems of how to measure unemployment under different heads. How can we discover how many persons are willing to work but unable to find employment? How long have these persons been unemployed, how many are seasonally unemployed, how old are they, and to what industries do they belong? If we wish to express these as percentages we must also know how many persons are available for work. The number and percentage of persons employed can, of course, be derived from this information by simple subtraction. How has this information been obtained and what has the information meant when it was obtained?

III

BEFORE UNEMPLOYMENT INSURANCE

Before the introduction of the Unemployment Insurance Scheme of 1912, the main source of information was the trade union figures of members unemployed. Since only a small proportion of all workers were included in the membership of the trade unions there was no indication of the total number of workers available for employment in the whole of industry. That information was obtainable only from the decennial Censuses of Population and the Census of Production of 1907. However, the percentage of trade union members unemployed might conceivably supply an index of unemployment in industry as a whole if only it was representative. Actually the returns of the trade unions concerning the number and percentage of members receiving unemployment benefit were published regularly in the *Labour Gazette* of the Board of Trade and give some indication of variations in unemployment before April, 1913, when the unemployment insurance figures were first published. But since the union percentages over-represented the fluctuating trades (trades represented were building, woodworking, furnishing, coal-mining, engineering, shipbuilding, other metal trades, printing and bookbinding, textiles and some miscellaneous trades), and

did not take account of short time or of casual occupations, it is not advisable to use them as a measure of the rate of unemployment generally even though they were very reliable for the trades covered and even though the underestimation of unemployment caused by the omission of the casual trades and short time unemployment was counter-balanced in times of depression by the over-representation of fluctuating trades. In particular it is not wise to compare them directly with modern statistics obtained from the Unemployment Insurance Scheme. Though there can be little doubt that the variations between 2 per cent and 7·8 per cent in the Trade Union percentage between 1894 and 1908 show that unemployment in this period was far less severe than in the period of recovery from 1932 to 1937 when the unemployment percentage dropped from 21·9 per cent to 10·1 per cent, the actual discrepancy might not have been so great. To quote Sir William Beveridge,¹ "on the whole . . . many are counted among the unemployed now who would not have appeared even if they were trade unionists, in the trade union returns of unemployment before the war; . . ."

IV

INFORMATION UNDER THE UNEMPLOYMENT INSURANCE SCHEME

In 1912 the Unemployment Insurance Scheme was put into operation, the compulsorily insured trades being building, construction of works, shipbuilding, mechanical engineering, ironfounding, construction of vehicles, and sawmilling carried on in connection with any other insured trades. The number of insured workpeople aged 16 and over amounted to about 2¼ millions (Great Britain and Northern Ireland) at that date and rose to 11½ millions by July, 1923, as more and more trades were brought into the scope of the scheme. In 1928 an upper age limit was introduced and fixed at 65, which, it was stated, would have reduced the number of insured workers in 1927 by about 2·9 per cent. The number of insured persons aged 16 to 64 has only risen to 13·7 millions by July, 1937, for there have

¹ *Economica*, May, 1937. "An Analysis of Unemployment," p. 182

been no really serious changes in the industries included in the scheme since 1923. In 1934 the lower age limit was reduced to 14 years and in 1936 the agricultural scheme was put into operation. Fortunately the statistics published in the *Ministry of Labour Gazette* make it possible to compile an unbroken comparable series from 1928 for insured workers, aged 16 to 64 inclusive (excluding agriculture).

The most important influences on the comparability of the figures for both number of insured workers and number of unemployed have been administrative and legislative changes regarding conditions for the receipt of unemployment benefit. These changes influence the incentive to register at the Employment Exchanges and thereby influence statistics of unemployment and, through their effects on the number of persons maintaining contact with the Exchanges, statistics of insured workers.

Certain changes in the administration of unemployment benefit came into operation in February and August, 1924, causing many persons to maintain contact with the Exchanges who would not otherwise have done so. It is estimated that the number of registered unemployed increased by over 80,000 as a result. Restrictions were re-imposed in 1925 and remained until April, 1928. These, of course, acted in the opposite direction. In April, 1928, certain restrictions were removed and it was also made possible in July, 1928, to maintain Health Insurance when unemployed by registering at the Exchanges, thus giving a new motive to registration. These measures tended to retain persons within the scheme who would have passed out of it and sent up unemployment figures by 65,000. The Unemployment Insurance Act of 1930 removed further restrictions on the allowance of benefit and led to an increase in the number recorded as unemployed by over 60,000 and to a considerable increase in the number of insured persons. Increases in rates of benefit in March, 1930, probably intensified this development. In October and November, 1931, important restrictions were placed on the allowance of unemployment insurance benefits and transitional payments while rates of benefit were reduced: as a result the numbers insured and unemployed suffered a substantial decrease which was particularly severe in the case of women. The 1934

Act which abolished transitional payments and substituted a non-contributory scheme of unemployment assistance and which came into operation in January, 1935, and April, 1937 (Second Appointed Day), increased the number of unemployed by about 40,000 but has robbed changes in conditions and rates of benefit of much of their influence since it is now necessary to register for employment in order to be eligible for unemployment assistance.

All these administrative and legislative changes have had important influences on the comparability of statistics of employment and unemployment which, though most powerful in the months following their introduction, have extended over one, two and even three years. It is, therefore, an almost impossible task to estimate the effects of these changes on the published figures of insurance and unemployment with any accuracy, particularly as, after a few months, the effects of natural growth and transference from non-insured to insured trades cannot be allowed for. We can only rely upon the official estimates of the effects of these changes which have been published from time to time in the *Ministry of Labour Gazette*.

V

THE COURSE OF EMPLOYMENT AND UNEMPLOYMENT

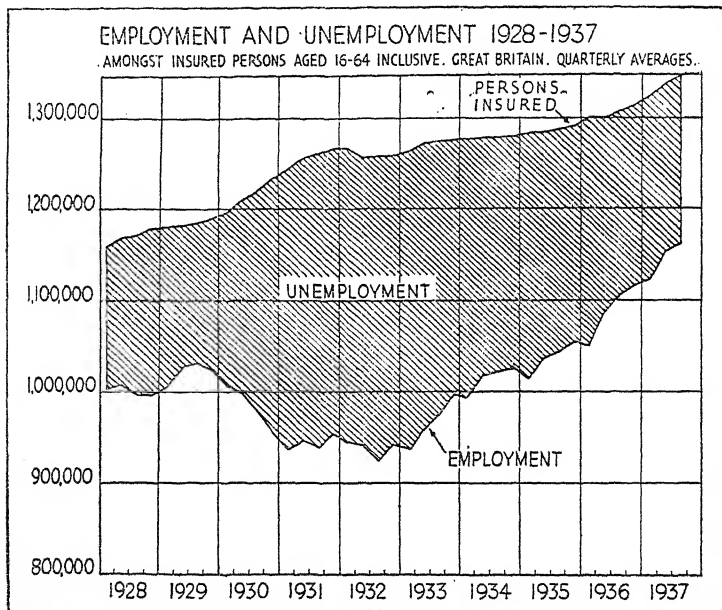
On Chart I is shown, from 1928 to 1937, the course of employment, and, represented by the discrepancy between the curves for insured workers and insured workers in employment, the variations of unemployment of insured persons. Considering first the curve showing the number of insured workers we see that the general trend over the period is upwards. This is due to (a) the growth of the working population, and (b) the increasing proportion of young industrial recruits entering insured trades and the number of persons transferring to insured trades.

Disturbing the trend are clearly visible the effects of the more serious administrative and legislative changes of 1928 to 1932. The other variations are, for the greater part, due to depression and recovery. In the recovery there has been a tendency for the rate of exit from insurance (apart from retirement at 65) to drop off. People who would have retired from insurable employment have been induced to remain. The effects of recovery in this

respect were particularly noticeable in the twelve months July, 1936, to July, 1937, and an unexpected increase of 100,000 was attributed to this cause by the Ministry of Labour.

The curve showing the number of insured persons in employment shows clearly how the depression affected employment and how steeply employment has risen during the recovery. In 1929

CHART I



(third quarter) insured employment was at a peak of 10,309,000 but fell to 9,200,000 in the depth of the depression (third quarter, 1932), a drop of over a million workers. During the recovery (up to the third quarter, 1937) the number has risen to 11,652,000, an increase of over 2 millions. The latter achievement must not be over-valued since many of the additional workers in employment are young recruits, and the absorption of the unemployed into employment has been far less than two millions.

The course of insured unemployment is shown by the space between the two curves already described (the figures showing

the number of persons registered as unemployed does not equal the difference between the two curves, since many of the registered unemployed are non-insured persons seeking employment through the Exchanges). It is seen that there was a rise until the first quarter of 1929, then, during the second quarter, a fall to 1,133,000 registered unemployed. After this brief recovery the number rose to a record high level of 2,843,000 in the third quarter of 1932. Since then the number has dropped to 1,376,000 (third quarter, 1937) which, in spite of the recovery, represents a higher rate of unemployment than in 1929 as well as a larger absolute number. It is clear that, though recovery since 1932 has resulted in a reduction of the number of persons unemployed by about $1\frac{1}{2}$ millions, there still remain more persons registered as unemployed than in 1929.

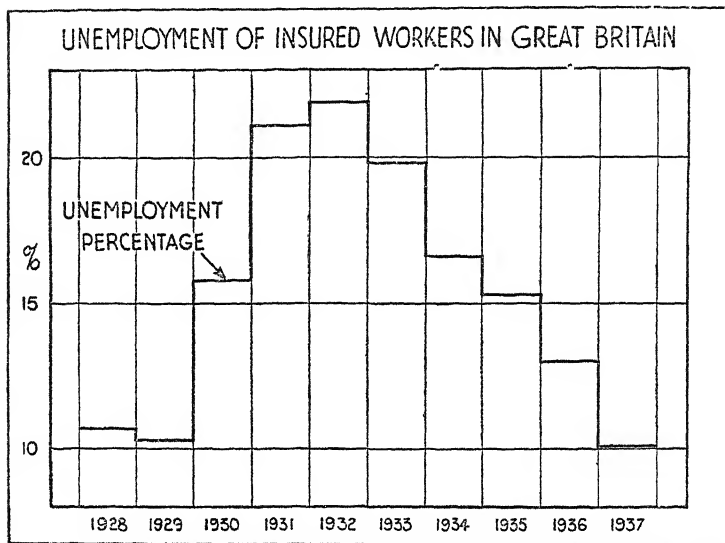
Though the course of unemployment as indicated by our chart has been regarded as a reliable indication of the actual course of events it must be remembered that, before it is completely accurate, it must be adjusted for administrative and legislative changes. The changes from October, 1931, to May, 1932, had considerable effect and reduced registered unemployment by about 170,000 persons. Since that date the only important factor has been the introduction of the Unemployment Assistance Scheme, but this cannot have increased the number by more than 40,000. Our description of the course of events since the third quarter of 1932 is, therefore, unaffected by any serious changes.

Considering a measure of the intensity of unemployment, namely, the percentage unemployment (whose yearly average for Great Britain is shown on Chart II), it is clear that the recovery has halved the rate of unemployment and brought it down roughly to the level of 1929. Unfortunately, it has taken five years to regain the ground which was lost in only three

The statistics given above relating to unemployment refer almost entirely to insured persons. To appreciate what the depression and recovery has meant to employment and unemployment in the whole of industry we must estimate what has been happening in those trades outside the scope of Unemployment Insurance and allow for the fact that the latter only includes persons 16-64 (except after 1935).

It is possible to estimate for Great Britain the number of persons out of work on 27th April, 1931, who were outside the scope of Unemployment Insurance. As the total number of persons over 14 out of work on that date as recorded in the Census of Population was less than the number of insured persons registered as unemployed on the same date it is apparent that the figures given in the Census underestimate unemployment. Mr. Colin

CHART II



Source: Ministry of Labour Gazette

Clark¹ has estimated the addition to the number of insured unemployed at that date which must be made to account for trades outside insurance and for persons outside the age limits. He bases his estimate on the figures given in the Census and obtains 773,000 as his correction. Since the Census underestimated unemployment generally and since we have no reason to believe that it recorded unemployment among non-insured persons more accurately than that among insured persons, Mr. Clark's estimate is probably on the low side. Adding this figure to the number of insured unemployed we obtain what is probably a

¹ Colin Clark. *National Income and Outlay*, p. 31.

conservative figure of 3,289,000 persons over 14 who were unemployed in April, 1931. If we assume that, since that date, the ratio of insured unemployed to the total unemployed has remained constant for each sex separately we obtain the following estimates of total unemployment at the bottom of the depression and at the highest level realized in the recovery—

Date	Men	Women	Total
(1) September, 1932	3,120,000	627,000	3,747,000
(2) September, 1937	1,345,000	317,000	1,662,000
(3) (1)-(2)	1,775,000	310,000	2,085,000

If our procedure is justified and Mr. Clark's estimate is near the truth it would appear that, in the trough of the depression, about $3\frac{3}{4}$ million workers were unemployed and that, in the best month so far recorded in the recovery, there were still almost $1\frac{3}{4}$ million unemployed. At the same time our figures indicate (row 3) that over 2 million unemployed persons have been re-absorbed into industry during the five years of recovery—an average of 400,000 per annum. This achievement is even more impressive if we recall that, in insured industry alone, there has been a net increase in the working population of over 2 millions and that there have been far more than this number of young recruits enrolled into industry. From these estimates it therefore seems plausible that, during the recovery of 1932 to 1937, industry has absorbed well over 4 million workers in addition to the replacement of persons who have died or who have retired.

VI

THE COMPOSITION OF UNEMPLOYMENT

We have now seen what "recovery" has meant in terms of employment and how far unemployment has been reduced. Yet a single figure of unemployment does not tell us much about certain important details of the actual state of affairs. We should like to know which people have been absorbed into industry, which people remain unemployed, and what has been happening in different parts of the country and in different industries.

VII

We cannot do better than to summarize the results of Sir William Beveridge's analysis on some of these problems.¹ In the first place there are general marked differences in unemployment between men and women in the country as a whole (1) The unemployment rate among insured women is a little more than half of that among insured men, this being due partly to the distribution of women among industries. (2) In every industry the proportion of unemployment covered by insurance is greater among women than among men. Proportionately, more women receive benefit than do men and there are more than twice as many (per cent) who get neither benefit nor assistance. (3) Finally, the incidence of prolonged unemployment is much more severe among men than among women. This is due to the fact that women tend to leave insured employment at a much earlier age than men and married women are not now considered to be unemployed. The numbers unemployed in the older age groups, where prolonged unemployment is severe, is therefore reduced.

VIII

In the second place unemployment varies very markedly in different parts of the country. In the section "The Effects of Recovery on the Various Regions" a table is given (p. 107) which shows the uneven incidence of the rate of unemployment in different divisions of Great Britain during recovery. Table I showing the average of July percentages from 1929 to 1936 also illustrates this point. Even within the same division or within the same county a glance at the Local Unemployment Index will show that there have been and still are wide variations between towns and districts only short distances apart.

There are also differences in the composition of the unemployment in different areas. For instance, in June, 1936, only 9 per cent of the total unemployment was of more than twelve months' standing in London and the South-east and only 14 per cent was of this nature in the South-west. But in the Midlands, the North-east, and the North-west 25 per cent to 27 per cent, and

¹ *Economica*, November, 1936, February, 1937, and May, 1937. "An Analysis of Unemployment," I, II, and III. By Sir William Beveridge

TABLE I
VARIATION IN UNEMPLOYMENT IN THE DIFFERENT DIVISIONS OF
GREAT BRITAIN, 1929-36

Division	Mean of Eight July Percentages
London . . .	8.8
South-east . .	7.8
South-west . .	11.1
Midlands . . .	15.2
North-east . .	22.7
North-west . .	21.6
Scotland . . .	21.8
Wales	30.1
South Britain .	11.0
North Britain and Wales . .	22.8

South Britain: London, South-east, South-west, and Midlands

North Britain and Wales: North-east, North-west, Scotland and Wales

Source: Sir William Beveridge. "An Analysis of Unemployment"

in Wales 37 per cent, of the unemployed had been without work for over twelve months.¹ The following statistics show what this means in absolute figures—

JULY, 1936

Area	Unemployment of 12 Months and Over	Insured
Great Britain	325,000	12,897,000
South-east plus South-west . .	21,000	4,648,000
North-west	90,000	2,150,000
Wales	64,000	611,000

IX

What has happened to the length of the period of unemployment as recovery has developed? In most divisions the absolute number of unemployed who had been unemployed for twelve months and over showed a rise from 1932 to the middle of 1933. It then fell until, in 1936, it was at roughly the same level as in

¹ This excludes spells of employment of three days or less

1932. Unfortunately, in Wales it has shown a continuous rise. On the other hand, turning to Table II, we see that the proportion of the total unemployed who have not had employment for more than twelve months has shown a marked rise during the recovery and points to the conclusion that it is the workers with the best employment records who have been most successful in reaping the benefits of recovery. But perhaps there is a partial explanation in the fact that there are certain men who, through age, disability, and sometimes inefficiency, are always at a disadvantage in seeking work. There are also certain workers who find that their benefit or assistance is almost equal to their wages and who would not be expected to seek work so keenly. The fact still remains, however, that, though the actual number of unemployed persons has been considerably reduced, speaking relatively the problem of the chronically unemployed man, which is probably the most urgent and difficult, has been accentuated.

TABLE II
DURATION OF UNEMPLOYMENT IN GREAT BRITAIN

Date	LAST PERIOD OF REGISTERED UNEMPLOYMENT				
	Percentage of All Unemployed				
	Less than 3 months	3-6 months	6-9 months	9-12 months	More than 12 months
MEN					
Aug., 1932	56.3	11.3	7.8	6.8	17.8
Sept., 1936	53.2	9.2	6.1	4.5	27.0
WOMEN					
Aug., 1932	75.6	9.3	4.5	2.6	8.0
Sept., 1936	74.5	9.2	4.7	2.4	9.2
MEN AND WOMEN					
Aug., 1932	59.0	11.1	7.3	6.2	16.4
Sept., 1936	56.4	9.2	5.9	4.2	24.3

Source: Sir William Beveridge. "An Analysis of Unemployment"

X

Finally, Sir William Beveridge came to the conclusion that, in the case of men "the later age groups contribute steadily increasing proportions as unemployment lengthens to become chronic" Table III shows that this tendency has been accentuated during the recovery. The percentage of older men (over 45) in the ranks of the unemployed has increased at the expense of the percentage of young men (under 35). In November, 1937, however, the movement was seen to have been reversed

TABLE III
AGE DISTRIBUTION OF UNEMPLOYED MEN AGED 18 TO 64 IN
GREAT BRITAIN
(Registered Unemployment)

Age Group	PERCENTAGE OF ALL UNEMPLOYED		
	November, 1932	May, 1937	November, 1937
18-20	7.5	3.7	4.1
21-24	12.9	10.9	11.9
25-34	28.0	23.4	24.3
35-44	18.9	20.5	20.3
45-54	17.7	19.7	19.2
55-59	8.0	11.2	10.7
60-64	7.0	10.3	9.2
65 and over	—	0.3	0.3

Sources: Sir William Beveridge, "An Analysis of Unemployment," and the *Ministry of Labour Gazette*

Considering the actual figures of unemployment, in July, 1935, in spite of the obvious recovery, there were over 350,000 men who had been unemployed for more than twelve months, and of these over 90,000 were between 55 and 65. By May, 1937, the number of men unemployed for more than twelve months had only fallen to 295,000 and in November, 1937, it was 262,000. The number of chronically unemployed men between 55 and 65 cannot, therefore, have fallen much below the 90,000 of 1935. These are the men to whom "recovery" has given few, if any, benefits.

XI

RECOVERY IN DIFFERENT AREAS

In "The Effects of Recovery on the Various Regions," p 107, it is shown that, during the recovery, the incidence of unemployment has been very uneven between the divisions of Great Britain. Furthermore, it is shown that the depressed regions (North-east, North-west, Wales, and Scotland) have not shared in recovery to the same extent as the prosperous ones. Let us now consider what has happened to the number of persons insured against unemployment in these divisions. Table IV shows the different rates of increase in the insured populations of the different divisions. This table shows how remarkable it is that *rates* of unemployment have behaved as they have. For, in those areas where there has been most improvement in rates of unemployment (London, South-east, South-west and Midlands), there have also been the greatest increases in the number of insured workers. Estimates of internal migration from 1931 to 1935 show that the relative increases in these areas have been largely the result of internal migration¹. We are therefore confronted

¹ The Registrar-General, in his Statistical Review of 1935, gives the following figures—

Percentage Increase Due to Migration

England and Wales	+ 0.5	N 3	— 0.76	Wales 1	— 4.20
South-east	+ 2.74	N 4	— 0.37	Wales 2	— 0.86
Greater London	+ 1.70	Midland	+ 0.36		
Remainder of the		M.1	+ 0.32		
South-east	+ 4.38	M 2	+ 0.47		
North	— 0.88	East	— 0.21		
N 1	— 2.63	South-west	+ 0.46		
N.2	— 0.51	Wales	— 3.31		

The composition of the areas is as follows—

- South-east: Bedford, Berks, Bucks, Essex, Hants, Herts, Kent,
London, Middlesex, Oxford, Surrey, Sussex
- Northern 1: Durham, Northumberland
- " 2: Cumberland, Westmorland, Yorkshire, (E.R. and N.R.).
- " 3: Yorkshire (W.R.) and York City.
- " 4: Cheshire, Lancashire
- Midland 1: Gloucester, Hereford, Salop, Stafford, Warwick,
Worcester
- " 2: Derby, Leicester, Northants, Notts.
- East: Cambridge, Huntingdon, Lincoln, Norfolk, Rutland,
Suffolk
- South-west: Cornwall, Devon, Dorset, Somerset, Wilts
- Wales 1: Brecknock, Carmarthen, Glamorgan, Monmouth.
- " 2: Rest of Wales.

with the fact that, in spite of the absorption of persons seeking work into these prosperous areas from depressed areas, the unemployment rates have declined relatively to those in other regions. This is a good example to refute the idea that an influx of "foreign" workers into an area to seek employment must necessarily push others in the area out of employment.

TABLE IV
NUMBER OF INSURED PERSONS (16-64)
(000)

Administrative Division	July, 1932	July, 1937	Percentage of 1932
London . . .	2523	2855	113
South-east . . .	840	969	116
South-west . . .	907	998	110
Midlands . . .	1892	2079	110
North-east . . .	1366	1427	104
North-west . . .	2126	2122	100
North . . .	787	785	100
Scotland . . .	1340	1398	103
Wales . . .	619	610	98

Source - Ministry of Labour Gazette.

XII

RECOVERY IN DIFFERENT INDUSTRIES

The rate of unemployment is by no means uniform throughout industry; in the depression of 1932 the rates of unemployment were widely different in different industries. For instance, from Table V it is seen that in June, 1932, unemployment was at such high levels as 58·6 per cent in shipbuilding, 47·7 per cent in steel smelting, iron puddling, etc., 40·6 per cent in coal-mining and at such low levels as 11·9 per cent in distribution, 14·3 per cent in electrical, cable, etc., and 14·9 per cent in hotel and catering. Nor has there been the same recovery in all industries. In almost all industries, of course, the rates of unemployment have been reduced, but the degree of improvement has varied considerably. Steel smelting provides a striking example by showing a decrease in unemployment from 47·7 per cent to 10·7 per cent whilst taking its full quota of the increase in insured population. Shipbuilding (58·6 per cent to 24·4 per cent), coal-mining (40·6 per

cent to 18·6 per cent), and cotton (30·4 per cent to 10·1 per cent) also made good progress, though apparently at the expense of a loss in their insured populations. On the other hand, certain industries such as distribution (11·9 per cent to 8·1 per cent), and hotel and catering (14·9 per cent to 11·3 per cent) have not shown so much improvement as far as the percentage unemployment is concerned, although they were, in 1932, among the most prosperous industries.

TABLE V
GREAT BRITAIN AND NORTHERN IRELAND

INDUSTRY	INSURED			INSURED IN EMPLOYMENT			UNEMPLOYMENT	
	July, 1932 (000)	July, 1937 (000)	Percentage increase 1932-37	June, 1932 (000)	June, 1937 (000)	Increase 1932-37 (000)	June, 1932 %	June, 1937 %
Building	857	1,035	+ 21	633	927	294	26·0	10·6
Transport and Distribution	2,824	2,972	+ 5	2,173	2,693	520	11·9*	8·1*
Electrical, cable, apparatus, etc	117	178	+ 52	102	171	69	14·3	4·5
Brick, tile, pipe, etc., making	88	106	+ 20	79	99	20	21·2	7·4
Furniture making, upholstering, etc	134	150	+ 12	106	137	31	20·8	8·8
Motor vehicles, cycles, and aircraft	252	352	+ 40	196	337	141	22·2	4·7
Hotel, public house, restaurant, etc	382	444	+ 17	325	391	66	14·9	11·3
Electrical engineering	94	115	+ 22	79	112	33	16·3	3·0
General engineering	551	614	+ 11	391	586	195	27·8	5·0
Steel smelting, iron puddling, iron and steel rolling and forging	168	182	+ 8	87	164	77	17·7	10·7
Metal industries not separately specified	204	266	+ 30	169	252	83	20·4	5·5
Shipbuilding and ship repairing	182	173	- 5	68	133	65	58·6	24·4
Coal-mining	1,045	868	- 17	620	699	79	40·6	18·9
Cotton	518	409	- 21	351	366	15	30·4	10·1
Woolen and worsted	234	223	- 5	170	204	34	26·4	8·7
TOTAL, G B + N I	12,808	13,697	+ 7	9965	12,327	2362	22·3	10·3

* Distribution only.

Source Ministry of Labour Gazette

The most striking figures relate to the numbers of insured workers *in employment* in the different industries. Here we see the remarkable advances in such industries as transport and distribution, building, motor vehicle, cycle and aircraft, and

general engineering, not to mention the other industries also given on the upper half of Table V. Particularly interesting is the revelation that the four industries, building, transport and distribution, motor vehicles, cycle and aircraft, and general engineering, which covered 35 per cent of the insured population of Great Britain and Northern Ireland in 1932, have contributed 1,150,000—about 50 per cent of the total increase—to the increase in the number of insured workers in employment during recovery. These industries have been the main single sources of increased employment.

An interesting feature of recovery is shown in the figures relating to the numbers insured in the different industries in July, 1932, and July, 1937. Migration between industries can be defined strictly as transference of persons from one industry to another. But most of the shifting of the working population between industries occurs as a result of recruitment or non-recruitment of young persons and it is quite logical to consider the whole of any deviation of the percentage increase in the number of workers engaged in an industry from the percentage increase in industry generally as "migration" into or out of that industry. Turning to Table V we see that there has been a considerable movement out of coal-mining, cotton and woollen and worsted, and a considerable movement into the electrical, cable, motor vehicle, electrical engineering, building, hotel and catering industries, and so on. From the table it can be seen also that the industries into which labour has migrated are, on the whole, those industries with increasing numbers in employment and lowest rates of unemployment. It speaks well of the economic adjustment that has been made in recovery that these industries have absorbed so many workers from less prosperous ones and yet maintained (except for building, which has declined recently) their favourable position.

It is to be observed that these movements in industry can be related to the spatial movements observed above and to spatial variations in rates of unemployment. On the whole, people have moved from depressed industries into prosperous industries and from depressed areas into prosperous areas. But the net result of both these movements has been that people have moved from

depressed industries situated in depressed areas into prosperous industries situated in prosperous areas

XIII

RECOVERY IN OTHER COUNTRIES

However vague such a comparison must necessarily be, it is interesting to compare the recovery in Great Britain with the course of unemployment in other countries. Though the actual percentages may be in no way comparable on account of differences in the definition of unemployment and in the efficiency of recording unemployment, there is less objection to comparing trends of unemployment. Table VI shows that, in the countries enumerated (unfortunately the percentages of unemployment for France and Italy were not obtainable), the trend of unemployment has been the same as in this country.

TABLE VI
RECOVERY IN DIFFERENT COUNTRIES

	PERCENTAGE UNEMPLOYMENT (YEARLY AVERAGES)						
	Great Britain	Australia	Canada	Germany	U S A	Japan	Sweden
1932	21.9	29.0	22.0	30.1	23.8	6.8	22.8
1933	19.8	25.1	22.3	25.8	24.3	5.6	23.7
1934	16.6	20.5	18.2	14.5	20.9	5.0	18.9
1935	15.3	16.5	15.4	11.6	18.5	4.6	16.1
1936	13.0	12.2	13.2	8.1	13.3	4.3	13.6
1937 (July)	10.1	9.7 ¹	9.5 ¹	3.9 ¹	9.7 ¹	3.9 ¹	9.3 ¹

Source *International Labour Review*

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THE EFFECTS OF RECOVERY ON
THE VARIOUS REGIONS

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THE EFFECTS OF RECOVERY ON THE VARIOUS REGIONS

THE effects of recovery on the various regions of Britain can best be indicated by means of the figures of unemployment among insured workers. Although these do not give a perfect index, and must be used with some caution, they provide the broadest and most up-to-date picture. The following are the percentages of insured workers unemployed in the various Ministry of Labour Divisions¹ in July in each of the years 1931, 1933, 1935, and in October, 1937—

PERCENTAGES OF INSURED PERSONS UNEMPLOYED ²

	1931	1933	1935	1937
Great Britain	22.1	19.5	15.2	10.1
London	11.6	11.0	7.8	6.0
South-eastern	10.2	9.5	6.4	6.4
South-western	13.1	14.1	9.6	7.3
Midlands	21.8	17.6	11.8	6.9
North-eastern	29.9	25.7	21.5	9.8
North-western	28.9	23.4	19.3	13.0
Northern	—	—	—	16.2
Scotland	27.4	25.8	21.2	14.5
Wales	32.0	34.5	30.0	21.3

The feature which is immediately apparent is the existence of considerable differences in the levels of unemployment in the different regions. Broadly speaking, the regions fall into two groups, one consisting of regions which have not only been consistently more heavily depressed than the other parts of the country but which have also failed to share in the recovery to the same degree as the most prosperous areas. The four Divisions

¹ The Divisions were changed in 1936, the Northern Division being created then, so that it is not possible to compare exactly the figures for 1937 with those for other years.

² Excluding Special Schemes and the Agricultural Scheme.

which constitute this group of depressed areas are the North-eastern, North-western (adding, after 1936, the Northern), Scotland, and Wales Divisions. The incidence of unemployment in these regions has been about twice as heavy as in the other, more prosperous, areas. This divergence exists not only in the years of depression, but also in the present period of recovery.

There are a number of factors which could account for this position. There is, for one thing, the fact of the differing amplitude of fluctuation in different industries during the trade cycle. Thus areas in which the industries with a wide fluctuation (and this includes most of the heavy industries) are dominant are likely to show a greater amount of unemployment in a depression and more intense boom conditions in prosperity than areas which contain mostly industries subject to less marked fluctuation. This, however, is not an important factor in the present situation, as it is seen that prosperity is least marked in those areas which are specialized upon the heavy industries.

Another factor, which is of more importance, is the long period change in the location of industry which has been in process throughout the post-war era. The decline in the older staple industries and the development of new forms of industrial activity have been accompanied by such locational change because the new industries have developed most markedly in areas other than the regions of the older staple industries. These regions thus have become depressed areas, with heavy localized unemployment and the serious social problems implicit in the existence of labour which is surplus to the needs of the industries of the areas. Readjustment must take one of two forms, namely, the migration or transference of workers from these areas, or the development of new industries in them. Some readjustment on both these lines has, of course, occurred, partly spontaneously and partly as a result of intervention by the State; but this has by no means been complete, and the cleavage between the depressed and the prosperous areas is as marked in recovery as it was in the depression.

A further factor of some importance is that recovery is due, in part at least, to an increased demand for armaments. Thus the boom is most intense in those areas which produce such products.

The net result of these factors is a position in which some areas are experiencing extreme boom conditions, while others are truly described as "derelict." The figures for the Ministry of Labour Divisions previously given show a wide degree of divergence, with, for example, the present incidence of unemployment in Wales being over three times heavier than it is in the Midlands or London Divisions, but the cleavage is even greater if smaller areas be taken. Thus, for example, there are many towns in the Midlands and London Divisions with an unemployment level of between 3 and 4 per cent, a figure which must be regarded as an almost irreducible minimum, while in the depressed areas towns with a percentage of unemployment of nearly 40 are not uncommon, while there are many places with a percentage of 30 or over. The former are mostly engaged in industries directly connected with the armaments demand, while the latter are towns in which there is almost no industrial activity unconnected with the older staples, especially coal-mining.

There is thus a situation of shortage of labour in some areas with surplus in others. There are, however, many factors creating immobility which prevent the appropriate readjustment from occurring, and, in spite of some State intervention, there is no evidence to suggest that such immobility can be overcome in the future. Indeed, the position presents some features which are somewhat paradoxical. Thus it is quite usual for there to be an unsatisfied demand for labour together with heavy unemployment in an industry in the depressed areas themselves. The situation in the Lancashire cotton industry is of this character. The industry has been experiencing a minor boom during the last few months, and the demand for labour has increased.¹ This demand has not, however, been completely met, as the process of attrition of the last decade has reduced the effective labour force attached to the industry, which has a fairly high percentage of unemployment, consisting of workers who are regarded as no longer suitable, because of their age, or long period of idleness. The same feature is found in the shipbuilding industry, which is experiencing a fairly intense boom and, in some districts, finding

¹ This has now (June, 1938) been reversed, and there is severe depression in the industry.

great difficulty in obtaining skilled workers, in spite of the level of unemployment being over 20 per cent—one of the highest figures for all industries. In fact, several of the staple industries are experiencing the difficulties of obtaining fresh supplies of skilled labour to meet an increased demand after a long period of decline. It is this fact of the revived demand for certain products coming after a difficult period of depression which gives the position of heavy unemployment coupled with an unsatisfied demand for labour in certain industries and areas.

Because of the special character of the boom there is also the fact of some places in the prosperous areas, being severely depressed. Thus there are towns in the Midlands with unemployment over 40 per cent. These are places which are dependent upon a declining industry which does not share in the revival of demand. On the whole, so far as it can be calculated, it seems that there is about one-tenth of the insured working force of the country situated in places which are "abnormal" in that they are in a position different from that of their surrounding areas (i.e. depressed in a prosperous area or prosperous in a depressed area).

Even allowing for the apparently permanent cleavage between the depressed and prosperous areas—which, resulting from long period changes, would not be removed by any cyclical changes—it can be seen that recovery has affected different regions in different degrees. The importance of the armaments demand, although it touches many varied industries, has been generally reflected in a greater degree of recovery in the areas in which armaments industries are most important. The Midlands area has had the fullest benefit; but some parts of the depressed areas have also shown fairly marked recovery. Thus Tyneside, Glasgow region, and the West Coast area have shown a much greater progress than the South Wales or South-west Durham areas. In fact, the position in these latter shows very little improvement, as they are almost entirely dependent upon one or two declining industries in which revival has been slight. The former areas have shown improvement with the great activity in iron and steel, shipbuilding, and engineering, and the effect has been the more marked in that these industries were so severely depressed during the depression period. If the figures of employment (rather

than those of unemployment) be taken as an index; then the northern areas have, during the past year, shown a greater degree of expansion than the more prosperous areas of the south for the first time during the past decade. Thus, momentarily, the secular changes of the post-war period seem to have been slightly checked by this factor

Another element, though quantitatively very much less important, has been some degree of State intervention in the location of industry. In the field of armaments, some factories have been established in the depressed areas, this, for example, has been important in some of the most depressed Lancashire cotton towns. More generally, the work of the Commissioners for the Special Areas, and the provisions of the Special Areas (Amendment) Act of 1937, have influenced industrial development in some degree in favour of parts of the depressed areas

On the whole, however, the outlook is far from reassuring. It is very much to be doubted whether the depressed areas can show a greater degree of recovery under present conditions, the fact of heavy unemployment together with unsatisfied demands for labour with even the degree of recovery which has occurred is significant. The main element is undoubtedly the longer period change in industrial location, and this has not been affected by the boom. Indeed the position has been made worse in that readjustment towards changed conditions will have to start again from a higher level once the abnormal increase in demand for the products of certain industries has passed. The heavy industries of the depressed areas have been stimulated beyond their normal post-war level of activity and the result must eventually be a still more painful process of decline. This is especially so in view of the fact that the previous processes of readjustment (e.g. by means of transference) have been to some extent arrested.

The same is true, though in less degree, of other areas which are experiencing the full effects of the boom. There are signs, for instance, that the normal demand for certain products of industries typical of the Midlands has reached a point of saturation. These industries, however, are growing larger in response to the armaments demand, once this diminishes, then contraction must take place from an abnormally high level of activity.

The problem is less serious than in the depressed areas in that there was no previous problem of need for contraction to meet reduced demand.

Thus the study of the regional effects of recovery shows various elements which make for instability, with the long-term problem of locational change in the background, resulting in the persistence of depressed areas side by side with prosperity.

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INDUSTRIAL RELATIONS

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INDUSTRIAL RELATIONS

THE years of recovery from 1933 to 1937 were remarkable for the tranquillity of industrial relations and for the success with which adjustments of working conditions to economic changes were made by the processes of negotiation and conciliation. Increases in the cost of living and the greater bargaining power of labour resulting from improved trade might have been expected to result in a considerable increase in time lost owing to industrial disputes. Previous periods of industrial recovery were usually attended by increase in industrial unrest, and the tranquillity of recent years stands in favourable contrast with earlier experience

The peaceful relations during the recent years of recovery are a continuation of a period of tranquillity which began after the General Strike and coal-mining stoppage of 1926. It was not surprising that strikes were few in the years immediately following the upheavals of 1926. The workers were disillusioned and their funds depleted, while the Government had shown considerable determination in the face of widespread dislocation of the industries of the country by trade union policy. Then the years of depression with heavy unemployment were unfavourable to successful strike action, though these years were marked by severe disputes in the woollen and cotton textile industries, in which the workers endeavoured, though without success, to resist reductions in wages to exceptionally low levels. Indeed, the time lost from strikes during the depression was appreciably greater than in the years of recovery, although the whole period from 1927 to 1937 inclusive was more peaceful than any other similar period since official statistics were first compiled in 1893.

The figures given in the table on p 116 show the aggregate number of working days lost in disputes in each of the years from 1927 to 1937 ¹

¹ The figures are aggregates of the number of workpeople involved in the various disputes multiplied by the number of working days involved. Disputes covering less than ten workpeople and those which lasted less

Year	Aggregate Number of Working Days Lost in Disputes	Year	Aggregate Number of Working Days Lost in Disputes
1927	1,170,000	1933	1,070,000
1928	1,390,000	1934	960,000
1929	8,290,000	1935	1,960,000
1930	4,400,000	1936	1,829,000
1931	6,980,000	1937	3,417,000
1932	6,490,000		

The annual average number of working days lost during the four recovery years from 1934 to 1937 was 2,041,500 compared with an annual average of about 13,300,000 for the whole period from 1893 to 1937. Thus the losses from disputes in recent years have been less than one-sixth of the average for nearly half a century past. Even omitting the exceptional year 1926 the average for the whole period is almost 10 millions, or nearly five times the average for the recovery years.

During the depression the textile industries were responsible for the greatest number of working days lost in industrial disputes. If, however, a longer period be taken the coal-mining industry has been much the most disturbed, and during the recovery period from 1934 to 1937 coal-mining resumed its position as the industry causing the greatest losses, accounting for almost exactly one-half of the total number of days lost in this period. The table at the top of p. 117 shows the most disturbed industries during these four years of recovery, the industries being arranged in order according to the number of working days lost.¹

In British industry, peace is determined largely by the relations between employers' organizations and trade unions. It is, therefore, of interest to consider how representative are the organizations of employers and of workpeople in British industry. Comprehensive statistics are available for the trade union

than one day are omitted except where the aggregate duration exceeded one hundred days. In addition to workpeople actually on strike or locked out, workpeople are included who, though not themselves on strike or locked out, were thrown out of work owing to disputes at the establishments where the stoppages occurred.

¹ In comparing the figures for different industries account should be taken of differences in the total numbers of workmen involved.

Industry	Total Number of Working Days Lost during the Years 1934-37	Percentage of Total in All Industries
Coal-mining	4,083,500	50 0
Transport	959,500	11 8
Engineering	864,500	10 6
Textiles	447,000	5 5
Building and Public Works	291,500	3 6
Clothing	266,500	3 3
Iron and Steel and Other Metal Industries	224,000	2 7
Other Industries	1,023,500	12 5
All Industries	8,160,000	100 0

movement. The following figures show the total membership of trade unions in Great Britain and Northern Ireland during and since the depression

Year	Membership	Year	Membership
1929	4,841,000	1933	4,392,000
1930	4,842,000	1934	4,591,000
1931	4,624,000	1935	4,868,000
1932	4,444,000	1936	5,308,000

During the depression the trade union movement lost nearly half a million members, but the years of recovery from 1933 onwards have seen a steady increase, the growth of membership between 1933 and the end of 1936 being not far short of a million. In 1936, therefore, allowing for the increase in the number of workers resulting from demographical changes, the trade union movement was at least as strong as in 1929, immediately before the onset of the depression. Similar statistics are not available for employers' organizations, but it is believed that no great changes have taken place in the representative character of organization on the employers' side. The maintenance of industrial peace during the years of recovery is not due, therefore, to decline in membership of employers' organizations or of trade unions.

The tranquillity of industrial relations during the years of recovery does not mean that the workers have neglected opportunities of securing increases in wages. Successful efforts were made in many industries to secure restoration of the cuts made during the depression, especially in the years 1931 and 1932, and these together with other increases in wages apply to several million workpeople. This upward movement in wages began in 1934 and has continued throughout the recovery period. It stands in sharp contrast with the continuous decline in wage rates during each year from 1927 to 1933 inclusive. The recent trend is indicated by the following statistics compiled by the Ministry of Labour showing the net weekly changes in rates of wages, while figures for the depression years are given to show the contrast between the two periods.

Year	Estimated Changes in Net Weekly Rates of Wages (Increases +, decreases -)	Year	Estimated Changes in Net Weekly Rates of Wages (Increases +, decreases -)
1929	- £ 78,800	1934	+ £ 91,500
1930	- 56,600	1935	+ 187,500
1931	- 401,150	1936	+ 492,900
1932	- 249,200	1937	+ 780,500
1933	- 65,250		

The improvement in rates of wages is indicated also by money wage index numbers compiled by the Ministry of Labour. These are tabulated below for recent years and are supplemented by index numbers of real wages calculated by relating changes in money wage index numbers to changes in the cost of living.

Year	Index Numbers (1924 = 100)		Year	Index Numbers (1924 = 100)	
	Money Wage Rates	Real Wage Rates		Money Wage Rates	Real Wage Rates
1929	98.8	105.5	1934	94.4	117.0
1930	98.4	109.5	1935	95.5	117.0
1931	96.5	114.5	1936	98.2	117.0
1932	94.7	115.5	1937 ¹	100.7	116.2
1933	94.0	117.8			

¹ First half

These statistics show an increase of about 7 per cent in money rates of wages between 1933 and 1937, and a high degree of stability in real wage rates, though with a slight tendency for decline, owing to increases in the cost of living being somewhat greater than increases in money wage rates. The data given above on rates of wages do not make allowance for changes in the number of workers in employment, reductions in short time, and other changes affecting earnings. If such changes be taken into consideration the increases in money earnings would be appreciably greater than the changes in wage rates shown above. Also increases, instead of stability in the purchasing power of the workers, would be indicated.

In addition to increases in money rates of wages and in earnings, other changes in working conditions have taken place during the years of recovery. The most interesting of these changes has been a rapid extension of the system of paid annual holidays, which now applies to about 5 million workers in British industry. Reduction of hours of work has been much discussed, but considerable changes have been rare.

These and many other questions have involved detailed negotiations between trade unions and employers' organizations, but conciliatory attitudes on both sides have resulted in agreements generally being reached. Throughout the recovery years no industry was involved in a national stoppage, and there were very few district stoppages. Most of the stoppages arose out of special circumstances at individual undertakings. In a considerable number of factories the workers have been responsible for unofficial strikes, that is, strikes undertaken without the approval and support of the responsible trade unions. More than one-half the total number of working days lost throughout British industry in 1936 was due to such stoppages.

Negotiations between important trade unions and employers' organizations involving serious risk of breakdown have generally been more important in the recovery period than the circumstances which have involved actual stoppages. Lengthy discussions were necessary before the railway trade unions and the railway companies were able to agree in 1934 about the restoration of wage cuts and other changes in working conditions, and

relations in this industry were hampered by the breakdown in 1933 of machinery of negotiation established under the Railways Act, 1921. New machinery was, however, devised, embodying certain new principles and this has operated successfully since 1935.

In many other industries difficult negotiations have been conducted on increases in wages, while in the engineering industry a demand for a substantial general reduction in hours of work was made by the unions during 1935, but, after preliminary negotiations, the demand was changed to one involving various wage increases and the introduction of paid holidays, and in 1937 an agreement was reached on these issues. For several years in South Wales and Nottinghamshire acute differences arose over the existence of industrial unions organized after the 1926 stoppage and recognized by some of the colliery companies but regarded with hostility by the Miners' Federation. By 1937 settlements were effected, although in Nottinghamshire delicate and protracted negotiations were necessary before agreement was reached upon a scheme for uniting the rival unions.

Among disputes involving considerable loss of working time special mention may be made of the strike of London busmen for about four weeks during the Coronation period in 1937. This arose mainly out of a demand by the workers for a reduction of the working day to seven and a half hours. The dispute was an unofficial one, being directed by a busmen's committee, but was terminated when the Transport and General Workers' Union resumed its authority and secured a return to work, on the basis of a compromise providing for adjustments in the timing of certain bus journeys and for further investigation into the main demands of the men.

As already indicated, voluntary machinery for collective negotiation is the chief method of regulating working conditions, and it has stood the test of the recovery period. The State has continued its policy of intervening in industrial relations only as a last resort when other means have failed. There is a growing recognition, however, that in certain industries, some of which are new or rapidly expanding, the organizations of workers and employers are too weak and unrepresentative to ensure the

effective regulation of working conditions by voluntary agreements alone, and there is a distinct tendency for the State, though preferring voluntary agreements, to consider the introduction of statutory methods in such industries. Developments along these lines have taken place since 1934 in the regulation of conditions of work of persons engaged in the transportation of goods by road.

Labour legislation, particularly that providing social insurance benefits for workers, has made a considerable contribution in reducing discontent and unrest. As a consequence of the establishment and extension of State systems of benefits for the worker in sickness, unemployment and old age, and for his children's education and welfare, some of the anxieties which in the past increased the risks of disputes between employers and workpeople have been greatly diminished and transferred to another field. Poverty has also been diminished by improvements in the real wages of unskilled workers.

The old spirit of bitterness and violence of the nineteenth century resulting from low standards of working conditions and unwillingness of employers to recognize organizations of workers is giving place to better mutual understanding. Within the factories more consideration is being shown for the human factor, as is indicated by increase in the number of labour managers and by greater interest in the results of scientific research into problems of industrial health and psychology. In negotiations between the great organizations of employers and workers there is a larger sense of responsibility and growing willingness to face the facts. There is also growing recognition of the common interests of employers and workers in the prosperity of British industry, especially in view of the intensity of international trade competition. New problems are continually arising, especially in connection with industrial and economic evolution, and their solution without serious disputes depends upon continued recognition of the need for improving labour standards as industrial progress is made.

TARIFFS, PREFERENCES AND OTHER
FORMS OF PROTECTION

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TARIFFS, PREFERENCES AND OTHER FORMS OF PROTECTION

THE years of depression, 1931 to 1933, saw the introduction of major changes in British commercial policy, a comprehensive tariff system for the protection of British industry being adopted, together with measures of Imperial preference and a policy of subsidizing agriculture. These measures are in sharp contrast with the free trade policy so consistently supported by the electorate for more than half a century before the war and which continued to be applied with only minor modifications in the early years after the war. In this section a review is given of these changes, special reference being made to the contrast between the systems in operation before and after 1931, the main features of tariff policy, the significance of the Ottawa agreements, and the subsidies and other forms of protection introduced for the benefit of the British farmer. Indications are also given of some of the consequences up to the present of the new policies

POLICY BEFORE THE DEPRESSION

The main characteristics of British commercial policy in pre-war days were freedom of British markets to the trade of the world, and the securing of unconditional most-favoured-nation treatment from foreign countries for British products. From the time of the Cobden Treaty with France until the war, customs duties on goods imported into Britain were solely for revenue purposes, and no preferences were accorded to the products of British colonies. During the early years of the present century increasing international competition and growing interest in Imperial relations resulted in interest being shown in various quarters in Britain in policies of protection and of Imperial preference, but the efforts of Mr. Joseph Chamberlain and others failed to convince the electorate of the wisdom of adopting these policies.

Between 1914 and 1931 the main features of pre-war free trade

policy were continued, but several special protective measures were introduced. The first of these was the imposition in 1915 of the McKenna duties of $33\frac{1}{3}$ per cent *ad valorem* upon certain so-called luxuries.¹ Though introduced as a war-time measure to relieve shipping, to secure revenue and strengthen the sterling exchanges, they were continued after the war and afforded substantial protection.

The principle of Imperial Preference was applied immediately after the war by granting a rebate of one-sixth of existing revenue duties on imports into Great Britain of goods produced in Empire countries. By the Dyestuffs (Import Regulation) Act, 1920, special protection was given to the British dyestuffs industry, the method adopted being the prohibition of imports except under licence, and this protection has enabled a large dyestuffs industry to be developed.² The chief modification of free trade policy during the first post-war decade, however, was effected by the passing of the Safeguarding of Industries Act, 1921, which provided for protective duties, usually of $33\frac{1}{3}$ per cent *ad valorem* for certain industries considered essential for national defence and industrial security.³ In addition to the specified "key" industries, the Act provided that any British industry could apply for the protection of a safeguarding import duty not exceeding $33\frac{1}{3}$ per cent.

The Safeguarding of Industries Act thus opened up wide possibilities of protection, but in practice safeguarding duties were reserved for a very few industries which could show that they were suffering from unfair foreign competition.⁴ So restricted was the application of safeguarding and other protective duties that until the depression the goods liable to such duties only amounted to two or three per cent of British imports. The new duties represented important changes of principle, but were

¹ The commodities covered by these duties were private motor cars, clocks, watches, cinematograph films, and musical instruments.

² During the war this industry had been subsidized by the Government.

³ These industries included the manufacture of scientific instruments, optical glass, wireless valves, ignition magnetos, and certain chemicals.

⁴ Among the articles to which safeguarding duties were applied at various dates were fabric and leather gloves, domestic glassware and pottery, incandescent gas mantles, lace and embroidery, cutlery, buttons, and packing and wrapping paper.

applied to a comparatively small range of commodities and industries. Until the time of the world depression the McKenna duties, safeguarding duties and some of the revenue duties remained the chief departures from free trade.¹

PROTECTION OF BRITISH INDUSTRIES

The far-reaching changes made during and after the crisis in 1931 stand in sharp contrast with the tentative modifications of free trade made during the years from 1914 to the world depression. After nearly three-quarters of a century of free trade policy Britain turned in a new direction in 1931, partly because of special temporary circumstances of the depression, but also because of more permanent changes. At the time when the change was made the protectionist measures were supported by some, including a section of the Liberal Party, who regarded them as temporary means of dealing with the difficulties of the world depression. The new policy has, however, been continued since the depression and must now be regarded as a permanent arrangement.

The first step was the passing of the Abnormal Importations (Customs Duties) Act, November, 1931, which gave power to the President of the Board of Trade to impose duties, where desirable in order to check an abnormal stream of imports, up to a maximum of 100 per cent on a large number of wholly or mainly manufactured goods. In practice duties were imposed at the uniform rate of 50 per cent *ad valorem*, this being regarded as adequate protection during the time necessary for the preparation of a more carefully adjusted tariff system. In February, 1932, this Act was replaced by the Import Duties Act, which is the foundation of the present system. The new Act adopted as basic rate of duty on imports of manufactured goods a 10 per cent *ad valorem* tariff.² It provided a basis for preferences within the Empire and for reciprocal agreements with or retaliation against foreign

¹ The revenue duties imposed upon imports of artificial silk, petrol and sugar gave some protection to the corresponding British industries.

² Provision was made for duties lower than 10 per cent in exceptional cases, but little use has been made of this power. On the other hand, as is indicated later, considerably higher duties have been imposed upon a large number of commodities.

countries The higher protection afforded by the McKenna, "Key" Industry and Safeguarding duties was maintained, and on other commodities duties could be raised above the basic 10 per cent by Treasury order on the recommendation of an Import Duties Advisory Committee These higher duties could be imposed upon luxury goods and upon articles produced or likely to be produced within a reasonable time in Great Britain. A number of goods were exempted, chiefly foods and raw materials.¹

In fixing duties higher than 10 per cent the purpose was to protect and foster home production on the ground that many articles were being imported from abroad which could be produced at reasonable cost by British manufacturers. The Treasury has power on recommendation of the Board of Trade to admit the goods of specified countries duty free or at duties less than the full rate, but in practice this power has been limited by an obligation to maintain certain preferences on imports of Empire products Subject to this limitation in favour of goods from Empire countries the Government is able to bargain with foreign countries, and has negotiated a number of bilateral treaties incorporating reciprocal concessions. Such concessions are disliked by various British manufacturing interests, which have endeavoured to bring pressure on the Government to maintain existing tariff rates for sectional reasons even when reductions were desirable in the broad political or economic interests of the community as a whole. In addition to its powers of reciprocity the Government has power of retaliation against any foreign country which discriminates against British trade. Retaliatory tariffs can be imposed at levels up to 100 per cent above existing rates upon goods imported from any such country.

The general effect of the Act has been to establish tariff scales mainly at two levels, as follows: (1) Rates applicable to foreign countries fixed by the 1932 Act or on the recommendations of the Advisory Board, or as a result of reciprocal negotiations, (2) lower rates on or even free entry of imports of Empire

¹ The exempted commodities included cotton, wool, flax, hemp, hides and skins, wooden pit props, rubber, wood pulp, paper for newsprint, iron ore, scrap iron and steel, in addition to these raw materials the chief foods exempted were wheat in grain, meat, and animals.

products. The reduced rates fixed in reciprocal agreements apply to all foreign countries by the operation of the unconditional most-favoured-nation clause, thereby avoiding discriminations.¹ There is also a possibility of a third higher tariff level resulting from measures of retaliation, but power to fix such rates is kept in reserve for exceptional and probably temporary application.

The Import Duties Advisory Committee began its work by making a series of general recommendations in April, 1932. Instead of dealing piecemeal with each separate industry, it proposed the fixing of uniform additional duties of 10 per cent *ad valorem*, making a total duty of 20 per cent on fully manufactured articles. Higher total duties of 25 or 30 per cent were fixed for luxury and semi-luxury commodities, total tariffs of 33½ per cent were proposed for bicycles and bicycle parts and for certain chemicals, while for a few articles used as raw materials the total rate proposed was 15 per cent. The Committee indicated its intention, however, of subsequently re-examining the duties where additional protection seemed appropriate or other difficulties required solution. The Government immediately applied these general recommendations of the Committee.

One of the first important industries to receive special consideration by the Committee was the iron and steel industry, which had suffered from severe depression and competition from abroad. Interest in the maintenance of a prosperous iron and steel industry in Great Britain was based upon the importance of this industry for purposes of national defence as well as upon economic considerations. Duties on some iron and steel products were, therefore, fixed at 33½ per cent, while on others the rate was 20 per cent. It was recognized that protection should not be granted to the industry in order to bolster up inefficiency, and the additional protection afforded was coupled with the condition that a satisfactory scheme of re-organization to ensure efficiency should be prepared by the industry itself.

¹ Since the Ottawa agreements came into force about one-quarter of British imports have remained free of duty, while about one-half pay new duties of 10 to 20 per cent. About 8 per cent are subject to new duties of over 20 per cent, and the remainder are subject to the old McKenna Key Industry and Safeguarding duties. Imports of a substantial part of the commodities still on the free list are restricted by other methods.

Some improvements in the organization of the industry have been made, and several new highly efficient plants constructed. During the years of recovery the industry has been able greatly to expand its production. This has been due partly to improvement in trade but also to the effects of the protective tariff, as expansion of production at home has been accompanied by decline in imports. The position of the industry was strengthened in 1935 by its joining, for the first time, the European Steel Cartel. In joining the Cartel the British iron and steel manufacturers were able, with the assistance of the British Government, to secure very satisfactory arrangements with their continental competitors.¹ A low quota was fixed for iron and steel imports into Britain, and satisfactory quotas of British exports to "neutral" markets were arranged. In view of the regulation of imports by the quota system the tariff level on imports of iron and steel products was reduced to a level not exceeding 20 per cent *ad valorem*.²

The Import Duties Advisory Committee has considered applications from a large number of branches of industry, usually for higher tariffs, though certain commodities not extensively produced in Britain but used as raw materials have been added to the free list.

In addition to the internal regulation of the new tariff system on the basis of the Import Duties Advisory Committee's investigations and recommendations, the Government has made extensive use of its powers to negotiate bilateral agreements incorporating reciprocal concessions. One of the main purposes of these agreements has been to secure improved opportunities for British exports to various countries, and particular attention has been given to obtaining better markets for coal, textiles and other exceptionally depressed British industries. The task of securing such concessions has usually been easy where the foreign country had a favourable trade balance with Britain. The Government of

¹ The British Government temporarily imposed a tariff of 50 per cent on imports from abroad, in order to assist the British iron and steel manufacturers in their negotiations.

² In the application of this arrangement the great demand for steel in certain periods has resulted in arrangements being made for higher import quotas than those fixed. British users of iron and steel, particularly motor manufacturers, have complained that steel prices have been unduly high.

the country concerned has been asked to bring about a greater equality of trade by increasing its imports from Britain. This it has often been prepared to do rather than face restrictions upon its trading opportunities in British markets.

Bilateral agreements were soon concluded with Norway, Sweden, Denmark, the Argentine, Poland and Russia. Denmark, for example, undertook to increase the proportion of British coal to 80 per cent of her coal imports and whenever possible in Government contracts to give a preference of 10 per cent to British iron and steel firms. The Danish Government also agreed to reduce its tariffs on textile manufactures. In the agreements with Norway and Sweden somewhat similar arrangements were made.¹ The agreement with Germany was much more restricted, though the British Government secured concessions of advantage to the British coal-mining industry. With the Argentine two agreements were reached, in the first of which Britain used her power as a large scale purchaser of Argentine products to ensure payment of trade and capital debts due to her from the Argentine, and the arrangement was mainly an instrument for debt collection. Under the second agreement the Argentine Government undertook to continue to admit coal and coke free of duty and to reduce tariffs on textiles, machinery, pottery, chemicals, and certain other commodities.² During 1937 considerable progress was made towards the conclusion of a bilateral trade agreement with the United States, and the negotiations were continued in 1938.

The bilateral agreements concluded have been based upon tariff reductions, and these reductions are of general application as a result of the operation of the unconditional most-favoured-nation clause. However, in negotiating the agreements each country has endeavoured to secure concessions which would be of special value to its own manufacturers. The bilateral agreements have, nevertheless, resulted in some tendency towards greater liberty of trading. On the other hand the British Government has occasionally used its powers of retaliation, for example, against

¹ The British Government made certain concessions on imports from these countries.

² In return the British Government limited somewhat her freedom to impose restrictions upon imports of meat from the Argentine.

France in 1934 because of discrimination in the application of the French sur-tax system designed to offset the advantage gained by exporters from countries with depreciated currency. This tax was operative against British goods after Britain's departure from the gold standard. Objection was also raised by the British Government to discrimination against British goods under the French import quota system, and finally the British Government imposed an additional retaliatory duty of 20 per cent *ad valorem* on certain classes of imports from France. Some months later a satisfactory commercial agreement was reached with France and the retaliatory duty was withdrawn.

Retaliatory measures were also directed against Japan with a view to restricting Japanese competition in British colonies and protectorates. In 1934 British and Japanese representatives of the cotton and artificial silk textile industries met to discuss an agreement for the regulation of trade, but no satisfactory arrangement was reached. The British Government then introduced a quota system which had the effect of restricting imports into various British colonies and protectorates. The quotas were based upon the average imports from the various countries during the years 1927 to 1931, the system being applied to all foreign cotton and artificial silk goods imported into these territories. The effect was greatly to curtail the sale of Japanese goods in these areas as the proportion of Japanese imports during the base period 1927-31 was relatively small, the expansion of Japanese trade having taken place subsequently.

Until recently Britain has been a strong supporter of the most-favoured-nation principle in its unconditional form, and the clause has been included in almost all British commercial treaties and agreements. Especially during the depression, however, difficulties arose in the application of this principle and there has been a tendency for the British attitude to change. The Government has indicated that it prefers to decide each case on its merits instead of laying down a general rule. The inclusion or omission of the most-favoured-nation clause in commercial treaties, whether in its unconditional or in a modified form, is now considered to be a question of expediency. The new policy is indicated in the following statement by Mr. Runciman in the

House of Commons on 4th May, 1933. "Countries entitled under existing treaties to most-favoured-nation treatment will enjoy the benefits of any reductions which are accorded by the arrangements now being negotiated, but the Government propose in due course to undertake negotiations with other foreign countries, and they will certainly not be prepared to continue indefinitely to accord full most-favoured-nation treatment to countries which show themselves unwilling to meet the reasonable requirements of this country in regard to the treatment of United Kingdom goods." Since this policy was enunciated, however, no measures have been taken to put it into effect.

It is yet too early to estimate anything more than the short range effects of the new protectionist policy. The main result has been to diminish importation of various manufactured and semi-manufactured articles from foreign countries and to stimulate their increased production at home. From British Commonwealth countries imports, consisting mainly of foodstuffs and raw materials, have increased during the recovery years, partly as a consequence of the preferential policy reviewed below. The statistics available show that home production expanded more rapidly during the recovery years than either imports or exports. British exports have shown least recovery, but, though it may be argued that British restriction of imports is partly responsible, there is no doubt that the failure of British exports to expand in similar proportion to recovery of home production and importation has been due mainly to the policies of economic nationalism applied by many foreign countries.

Statistics of Britain's imports and exports show that her trade with foreign countries now forms a smaller proportion of her total trade than before the depression. The proportion was nearly 68 per cent in 1929, but has been only about 60 per cent during the years of recovery. Imports from foreign countries during the years 1934 to 1937 represented 61 to 63 per cent of total imports, while exports to foreign countries represented only about 51 to 53 per cent of total exports. Among particular industries greatly affected by the new policy mention may be made of the iron and steel and engineering groups which showed the greatest reduction in imports. These industries, and also

coal and textiles have derived some benefit from the bilateral trade agreements

Improvement in trade with foreign countries in the sterling area has been somewhat greater than with countries with other currency standards. The chief cause of this difference is the currency and trade restrictions adopted by countries outside the sterling area, while on the other hand currency stability and trade agreements have facilitated expansion of trade with countries in the sterling area. Compared with 1929, trade in the recovery years was relatively smaller with non-European foreign countries than with foreign countries in Europe, as the exports of the non-European foreign countries consist largely of food and raw materials and these have suffered in competition with the similar products of the favoured countries within the British Commonwealth. Thus in 1934-35 imports from foreign countries outside Europe were about 28.5 per cent of total imports, and exports about 18.5 per cent of total exports, compared with 35.4 per cent and 23.9 per cent respectively in 1929.

The effect of protection upon prices has been less than was anticipated. Both wholesale prices and the cost of living fell slightly in 1932 and 1933, but subsequently they moved upwards until the autumn of 1937. The upward movement was not, however, greater than that frequently experienced in the recovery period of a trade cycle. Complaints have been made that the prices of certain commodities have been unduly increased as a result of the policy of protection. Mention has already been made of the complaints of manufacturers in the motor-car industry and other branches of engineering that iron and steel prices had become unduly high.

The introduction of protection helped to correct an unduly adverse balance of trade during the depression and in the early years of recovery, and the tariffs also produced a substantial revenue at a time when other sources of income were difficult to find. As already noted, expansion of home production has taken place, but against this must be set losses of production for export, and of income from shipping and financial services associated with foreign trade. By the bargaining power given

by the tariff system Britain has been able to require certain countries with very favourable balances of trade to buy a larger proportion of their imports from Britain. Britain was able to do this at a time when the system of triangular trade was not working effectively, and when there was no certainty that importation of foreign goods by Britain would result in a corresponding demand for British exports. The British policy has been dictated partly by political considerations, this having resulted in a diminution of dependence upon foreign supplies and a strengthening of trade relations within the Commonwealth.

IMPERIAL PREFERENCE

During a large part of the free trade period before the war Britain combined refusal to protect industries at home with an "open door" policy throughout the Empire. After 1860 no preferences were granted in the British market to the products of the colonies, while British manufacturers received no favours in colonial markets in their competition with foreign manufacturers. This policy was applied during the period when Britain was responsible for commercial policy throughout the Empire. The first modification began when some of the more advanced colonies, which later became self-governing Dominions, desired to apply a policy of protection and at the same time to grant preferences to British products. In colonies where tariff autonomy came to be exercised preferences were accorded to exports of British manufactures. Throughout the pre-war period, however, Britain maintained free trade at home and the open door in those parts of the Empire which had not made substantial progress towards self-government. In the early years of the present century a policy of Imperial preferences was advocated, particularly by Mr. Joseph Chamberlain, but did not receive adequate support from the electorate.

The war marks the beginning of a transition, for Empire products were given favourable treatment under the British war-time system of licensing imports. Certain preferences were accorded to Empire products under the Finance Act of 1919,¹ and two

¹ These provided for rebates for Empire products of one-third of the McKenna duties, and of one-sixth of revenue duties.

years later Empire products were entirely exempted from the duties imposed under the Safeguarding of Industries Act. In practice, however, these concessions were of little value. In order to grant valuable preferences to Empire products an extensive system of tariffs on foodstuffs and raw materials was necessary, and these goods largely entered Britain duty free.

It was not until after the passing of the Import Duties Act, 1932, that Britain had a protective system extensive enough for her to offer a wide range of preferences to the Dominions and Colonies. Such preferences were arranged at the Ottawa Conference in August, 1932, the system being based upon the principle of "the home producer first, Empire producers second and foreign producers last." The methods adopted at the Conference were somewhat similar to the bilateral trade negotiations with foreign countries to which reference has already been made. The preferences accorded by the Ottawa Agreements were, however, exclusive, not being passed on to foreign countries by the operation of the most-favoured-nation principle.¹ At the Ottawa Conference British representatives endeavoured to secure advantages additional to those already granted in Dominion and Colonial markets, and in return the Dominions and Colonies negotiated to obtain preferences in the British market over foreign traders. These negotiations were not easy, because the more advanced Dominions were determined to afford substantial protection even against British manufactured products, while the British Government was engaged in an attempt to secure better conditions for the British farmers who were experiencing severe competition as a result of imports both from the Dominions and foreign countries.

Separate preferential agreements were concluded at Ottawa between Great Britain and Canada, Australia, New Zealand, Newfoundland, South Africa, Southern Rhodesia, and India. The agreements were concluded in the first instance for five years.² After 1937, therefore, the agreements have been subject

¹ It was considered that commercial concessions between different parts of the British Commonwealth were matters of domestic concern and did not give any foreign country the right to claim these advantages on the basis of most-favoured-nation agreements with Britain.

² The Indian agreement, however, could be terminated by giving six months' notice.

to reconsideration and separate negotiations have been undertaken between Britain and several of the Dominions. These negotiations are closely related to the arrangements under consideration for a bilateral trade agreement with the United States. If the United States succeeds in securing concessions in the British market in return for reciprocal treatment for British goods in the United States, the advantages gained by the United States in the British market would reduce the preferential treatment hitherto received in Britain by the Dominions. They are, therefore, endeavouring to secure compensation both from Britain and the United States.

The Ottawa Agreements of 1932 provided that in return for increased preferences to British products in the Dominions, the British Government would continue to exempt Empire products from the duties imposed under the Import Duties Act, 1932. In other words the British Government undertook to grant free entry to Empire products and to maintain duties of at least 10 per cent on specified foreign products, including timber, leather, tallow, lead, zinc, copra, asbestos, and certain foodstuffs, particularly wheat and flour. Britain also agreed to impose or increase duties on foreign supplies chiefly of certain foods and raw materials in which the British Dominions were specially interested, some of which had hitherto been untaxed. Thus new or increased duties were imposed upon wheat, butter, cheese, rice, and various fruits.

In granting Imperial preferences the British Government tried to provide safeguards against injury from shortage of supplies and to ensure expansion of agricultural production at home. As an example of the first safeguard, the new duties on foreign wheat and certain metals could be removed at any time if Empire producers did not offer those commodities in the British market at prices not exceeding world prices and in quantities sufficient to supply the requirements of British consumers.¹ Restrictions in the interests of British agriculture were introduced so that the desired expansion of imports from the Dominions would be realized only in so far as this was consistent with the progress of agricultural production at home. Thus the British

¹ This was provided in the Canadian agreement.

Government undertook to regulate her imports of frozen meat with a view to raising meat prices to remunerative levels. A system of quantitative regulation of dairy products was also envisaged, but it was provided that such a system would be introduced only in consultation with the Dominions.

The British Government was also concerned about the degree of protection which the Dominions were affording to their industries, and incorporated in its agreements with Canada, Australia, and New Zealand the idea that protection by tariffs should be afforded against United Kingdom products only to those industries which are reasonably assured of sound opportunities for success. Associated with this was the general condition that Dominion duties against British products should not exceed such a level as would give British producers full opportunity of reasonable competition on the basis of the relative cost of economic and efficient production. Exceptions were, however, to be allowed for "infant industries." These two provisions have proved difficult to apply. Detailed inquiries conducted by the Canadian Tariff Board, for example, into British and Canadian costs of production of various commodities led to no satisfactory conclusions about relative costs.

In the operation of the Ottawa Agreements prolonged discussions arose over the application of the principles mentioned in the two preceding paragraphs. Difficulties were also experienced in ensuring to Dominion farmers the share they desired of the British market at a time when the British Government was applying schemes, which are reviewed below, for improving the position of British agriculture.

Valuable preferences to British manufactured products were accorded by the Dominions, the concessions being appreciably greater by New Zealand than by the more industrially developed Dominions of Canada and Australia. A study of the trade statistics since the Ottawa Agreements were concluded suggests that the Agreements operated distinctly more favourably for the Dominions than for Great Britain, and this is not surprising, as Great Britain was granting for the first time preferences on a wide range of commodities, whereas the Dominions were continuing their traditional policy of protection, while,

however, affording somewhat increased preferences for British products

The Ottawa Agreements have resulted in an increase in trade within the Commonwealth, but this has been due mainly to expansion of exports from the Dominions to Great Britain. As the purchasing power of the Dominions increased, however, during recovery years there was a steady though smaller improvement in British exports to Empire countries. The British Dominions and Colonies gained in their trade with Britain at the expense of foreign countries. Also, as a result of shrinkage in world trade and exceptional restrictions by foreign countries, Britain's trade within the Commonwealth represents since the Ottawa Agreements an increased proportion of her total trade.

The following figures show changes in the percentages which British trade with countries within the Commonwealth formed of total trade during the years 1924 to 1929 (average) and during each of the recovery years from 1933 to 1937¹

BRITISH TRADE WITH EMPIRE COUNTRIES AS A PERCENTAGE OF
HER TOTAL TRADE

Year	Percentage of Total Imports	Percentage of Total Exports ²
1924-29 (average) .	26.8	35.2
1933 . . .	34.3	36.0
1934 . . .	34.7	38.4
1935 . . .	35.1	39.5
1936 . . .	36.8	40.2
1937 . . .	37.3	39.7

These figures show that the gain in Britain's exports to Commonwealth countries was smaller than the increase in her imports from those countries.

The tariff system is not the only factor responsible for the changes. Trade between the countries of the British Commonwealth has been facilitated by the fact that all of them except Canada linked their currencies with sterling. Account must also be taken of the capital investment by Britain in Empire countries. Britain's imports during recent years represent in large

¹ The figures exclude trade with Eire.

² Including re-exports.

part payments of interest and some repayments of capital by Commonwealth countries to Britain, and the record of these countries in meeting their capital obligations during and after the depression has been excellent in comparison with the extensive defaults among foreign countries

AGRICULTURAL PROTECTION

The long established policy of free imports of food and raw materials required by British industries and the industrial population created difficulties for British agriculture, which suffered from almost continuous decline. Although the advantages of a prosperous rural community were recognized, the electorate for many years steadily opposed protection for agriculture, fearing that this would result in an increase in the cost of living and would also reduce the competitive power of British industry.

During the world depression the collapse in prices of agricultural products all over the world resulted in a flood of imports at unremunerative prices into Britain, which remained the only important market free from restrictions. This threatened British farmers with disaster, and, in order to enable them to survive, the British Government introduced various protective measures. At first these were temporary devices to meet an emergency, but after the Ottawa Conference an attempt was made to evolve a more co-ordinated policy. The new policy was designed first to prevent British agriculture from being submerged by a flood of imports at ruinously low prices and then to secure satisfactory conditions on a permanent basis. This policy created some uneasiness in the Dominions, as they desired a steadily expanding market for their products in Britain. Still more uneasiness was caused in various foreign countries which had supplied agricultural products to the British market, for they recognized that Britain had abandoned her former policy of buying food and raw materials in the cheapest markets.

Several methods were adopted, including tariffs, quantitative regulations, subsidies, levies and organized marketing schemes. Some of these were applied separately to particular branches of agriculture, while for other branches a combination of methods

was adopted. The general object was to give the British farmers a first claim upon the great market represented by the British industrial population, especially for those commodities which were suited to production in Britain. During 1932 duties were imposed upon imports from foreign countries of various commodities, including dairy produce, eggs, and wheat. As, however, by the Ottawa Agreements imports of these commodities from the Dominions were exempt from these duties little protection was afforded to the British farmer, who remained fully exposed to the severe competition from within the Commonwealth.

This difficulty led to measures of quantitative regulation applied against both foreign and Empire products, the quotas, however, being fixed in ways which gave preferences to imports from Commonwealth countries. The commodities mainly concerned were meat, dairy products, eggs, and poultry.¹ One of the first schemes of quantitative regulation was applied to bacon, about three-quarters of the supplies consumed in Britain having hitherto been imported from abroad, particularly from Denmark. There seemed, therefore, substantial opportunities both to develop production at home and to increase imports from Commonwealth countries, especially Canada, at the expense of foreign suppliers. Home producers were given what was practically a guaranteed market for their output, and the quota of imports from abroad was based upon the difference between home production and the estimated amount of total consumption.

Special difficulties arose in dealing with the meat industry, especially beef, which, with the associated milk and dairy products, is Britain's chief agricultural asset and is well suited to British conditions. For both beef and mutton the method of quantitative regulation of imports was adopted. The countries mainly involved were those in South America, particularly the

¹ The quantitative measures of regulation were associated with agricultural marketing schemes, particularly under the second Agricultural Marketing Act, 1933. These marketing schemes are not here discussed, as they are mainly concerned with the better marketing of home production, and have had only an indirect effect upon external trade. The satisfactory operation of the schemes was, however, dependent upon the quantitative regulation of imports, the two methods being intimately related. Marketing schemes of special importance for home production were introduced for potatoes, milk, hops, eggs, and poultry, and for some of these commodities imports were restricted either by quotas or tariffs.

Argentina, which supply large quantities of chilled beef, and Australia and New Zealand which sell to Britain a large amount of frozen mutton and lamb and considerable amounts of frozen beef. Certain restrictions were imposed during the depression, especially upon supplies of meat from the Argentine, but their effect was small, and the difficulties of British meat producers increased during the years 1932 to 1934. The British Government, therefore, decided to introduce stronger measures to safeguard the position of the British livestock industry.

Owing to various undertakings the British Government was not free for some years to restrict imports by the method of quantitative regulation, while in accordance with the terms of an agreement with the Argentine it could not impose a tariff on meat from that country until November, 1936. In these circumstances it adopted a policy of subsidizing home-produced beef. It also concluded short term agreements regulating the quantities of beef and mutton imports into Britain from Australia and New Zealand with the object of maintaining a more reasonable level of prices.

The levy and subsidy methods are best illustrated by the schemes applied to wheat and beet sugar. The Wheat Act, 1932, was passed with the object of securing to British wheat growers a secure market and a higher price for their crops, while avoiding a direct subsidy from the Exchequer. It was claimed that such assistance was necessary in order to increase the amount of British home-produced food and to help the growers during the depression so that they would not be forced out of wheat cultivation. The method adopted was that of a guaranteed price, and the farmers receive deficiency payments representing the difference between the average price realized and the guaranteed price. In order to discourage undue expansion of home production deficiency payments are limited to a specified total of wheat deliveries from British farmers to the millers, and the deficiency payments are proportionately reduced if more wheat is delivered.

The amounts required for the deficiency payments are obtained by a levy on each sack of flour consumed in the country, whether made from wheat grown at home or imported. The levy is fixed

each year, and varies according to the price of wheat and the volume of home and imported supplies. As wheat prices rise, the amounts of the levy and the deficiency payments fall. This method was adopted largely in order to avoid a high protective tariff. A relatively small levy on the large flour consumption of the country yields a substantial amount and has enabled handsome subsidies to be paid on the small wheat production of the country. The effect of the system has been to cause an expansion of wheat production at home and in recent years production has been the highest on record, both in total amount and yield per acre, the farmers not only extending their acreage but also cultivating more intensively. Some of them have done this even at the risk of exhausting the soil. The subsidy undoubtedly helped wheat farmers during the period of very low unremunerative prices in the depression, but it has been costly, falling as an indirect tax upon the bread consumer. The cost is borne largely by the poor, while substantial benefits are reserved for a small section of agriculture largely localized in a few counties. To some extent cultivation seems to have been extended to unsuitable areas.

The system of subsidy for the sugar beet industry was introduced much earlier than the depression, and is therefore not a new factor in the recovery period. When originally introduced in 1925 the intention was to subsidize the industry for a period of ten years to assist it during the early stages of its development. Throughout this period of ten years heavy subsidies were paid to the industry, and the acreage under sugar beet cultivation rose from about 22,500 in June, 1924, to nearly 400,000 ten years later, while the amount of home-produced sugar rose from 24,000 tons in 1924-25 to over 600,000 tons in 1934-35, and at the present time production represents nearly one-third of the country's requirements.

The subsidy was paid direct to the factories according to their sugar production, and the growers benefited indirectly through the price received for beet deliveries. There was no limit to the amount of sugar on which subsidy was paid. The rate of subsidy per cwt. was greatly reduced during the ten years, but the cost to the taxpayer rapidly increased as production expanded. In

the last of the ten years the subsidy from the Treasury was about £3 $\frac{3}{4}$ million ¹

When the original period came to an end the Government recognized that to withdraw assistance would result in a big decline in production, and they therefore decided to continue the subsidy indefinitely, but to set a limit to the volume of production receiving direct subsidy ² The rate of subsidy is to be varied periodically according to changes in the world price of sugar, the price of beet, and other factors ³

During 1936 and 1937 with improvement in agricultural prices much less attention than a few years ago has been given to marketing schemes and further increases in protection for British agriculture. Instead, the Government has shown more interest in methods of improving the productive efficiency of the industry. Diminished interest has also been shown in quantitative control of imports which was closely associated with marketing schemes. They have become less necessary as the currencies of various countries became more stable and as the prices of agricultural products became more remunerative. Of the various methods introduced before or during the depression for assisting British agriculture a low tariff seems the least objectionable. In ordinary circumstances it would ensure reasonable stability for efficient British producers and give them some priority in the home market. At the same time British prices would move in fairly close relation with world prices and consumers would benefit from reductions in costs abroad.

Protection of British agriculture has not resulted in growth of employment on the land, although there has been expansion of particular types of production, especially wheat and sugar beet. Notwithstanding protection the number of agricultural workers has continued to decline. British consumers have not suffered from a serious rise in prices of foodstuffs as a result of protection, the level of prices in Britain still being mainly controlled by world

¹ In addition the industry benefited from a preferential excise duty the value of which in the last year was about £2 $\frac{1}{2}$ million

² The volume is the equivalent of 560 tons of white sugar annually

³ In 1936 the charge to the Exchequer was almost £3 million, but during a transitional period of five years assistance to the industry is at a diminishing-rate. The preferential excise duty is maintained

movements. During 1935 until 1937 the prices of foodstuffs rose in Britain, largely because of the rise in world markets, but the advance in prices was arrested towards the end of 1937. The export trades and shipping have no doubt suffered somewhat as a result of agricultural protection, although there is no reliable means of measuring their losses.

Exact information is not yet available to show what change has taken place in the proportion which British agriculture produces of the total food requirements of the British people, but there are general indications of an increase in the proportion since 1933. In imported foodstuffs there has been a substantial change over from foreign countries to Empire countries. The trade statistics show that Empire countries made considerable gains in the British market as a result of the Ottawa policy. Shortly before the policy of Imperial preference was applied Britain imported about 38 per cent of her food supplies from Empire countries, but since 1933 the proportion has increased to 50 per cent or more. Apart from sugar beet cultivation and some extension of wheat production to unsuitable areas, the protective measures have mainly benefited those branches of agriculture for which British conditions are well suited.

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THE FOREIGN EXCHANGES
1932-1937

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THE FOREIGN EXCHANGES 1932-1937

THE world Monetary and Economic Conference of 1933 is the focal point in the history of the foreign exchanges during Britain's recovery from the depths of the depression. The failure of the Conference transferred the initiative in monetary matters from London to Washington, and since that time it has not been possible for London to develop or to put into practice an independent monetary policy. In the early months of 1933 there appeared to be at least a chance that this might be done. Once the conversion of 5 per cent War Loan had been completed and "sentiment" had had a chance to recover from the alarm at the shipment of gold from the Bank of England to pay the December, 1932, instalment of War Debts, a strong flow of money into London started. The Exchange Equalization Account was able to hold the value of the pound sterling at approximately 70 per cent of its previous gold parity during January, February, March, and April, 1933, and to acquire at the same time at least some £60 million of gold (valued at 85s per ounce) which was added to the gold stocks of the Bank of England. The Exchange Account was, in effect, used during the period not for the purpose for which Parliament had authorized its establishment, that is to say, to offset short-period movements in the value of the pound, but as an instrument of long-run policy which aimed at strengthening the reserve position of the Bank of England with the apparent object of consolidating the policy of cheap money.

The use of the Account for this purpose at this critical period seems to explain most of the subsequent events, for in consequence of it the deflationary effect upon world gold prices and particularly upon the dollar prices of American exports was maintained, so that it was not surprising that subsequent American monetary experiments, which wrecked the World Conference, were authorized as an amendment to a bill dealing principally with agricultural reconstruction. London overplayed its hand during the

period of Washington's impotence and must share with the new administration the responsibility for the break-down of the World Conference and subsequent difficulties which are resulting from the high price for gold which was adopted by the American administration at the end of January, 1934

It was the low value at which sterling was held in the period prior to his inauguration that made it politically necessary for President Roosevelt first to unhitch the dollar from gold and then to adopt the gold buying policy which rapidly brought the dollar down to a sterling value substantially below its 1925-31 parity. This policy rapidly took the pressure off American prices of exportable produce and confronted the rest of the world with a new problem, that of a substantially undervalued dollar. This phase of American policy was completed when, at the end of January, 1934, the President fixed the price of gold at \$35 per fine ounce, revalued the American gold stocks and used part of the resulting profit to establish an Exchange Stabilization Fund. Having failed in the period prior to and during the World Conference to reach an arrangement with the British authorities of a kind which they regarded as reasonable, the Americans had shown their teeth and proceeded to beat the British at their own game. When the President re-established a limited gold standard at the new dollar price for gold, the American teeth remained bared. Using the power given to him by Congress, the Secretary for the Treasury issued in February, 1934, new regulations governing the import and export of gold to and from the United States. The Treasury undertook to sell gold at the new price with a spread of 50 cents between the buying and selling prices, but this undertaking was only to be discharged in favour of other Treasuries and central banks and then only if these Treasuries and central banks bound themselves by a reciprocal obligation. Unless and until the British authorities undertook to sell gold at a fixed price to the American Treasury, America would not sell at all to Britain. London must either return to a limited gold standard of the new American type or it must cease to use its Equalization Account in the dollar market

The British monetary authorities had felt themselves obliged to follow the dollar down during the period of its rapid dévaluation

in the last few months of 1933 in order to mitigate the consequences to traders in the whole of the sterling area of the increasing undervaluation of the dollar. Once the dollar price for gold had been fixed at \$35 per fine ounce, the best that they could hope for was a rate of exchange on New York not far from the old parity of \$4 866 to the £, and this meant a price for fine gold in London of approximately 140s per ounce. And this they could achieve only by operating upon the franc as the American market was closed to them. They were, in fact, obliged to choose between putting a further and considerable strain upon the gold bloc currencies or holding an open position in dollars. Regardless of the strains which it imposed upon other countries, the value of the pound in terms of francs fell to the neighbourhood of 60 per cent and was maintained at roughly that level throughout 1935 and the first nine months of 1936. By this means the rate upon the dollar was brought down to and kept not far from its old parity and the price of gold in London was equated to the new American price.

In the meanwhile the world currency system had split itself up into five groups. First the sterling area, principally the Empire and a group of foreign countries which had trading relations of special importance with the United Kingdom. Secondly, the dollar and a very much smaller group of satellite currencies. Inside both these groups stable and orderly exchange dealings were maintained, and in so far as the pound had become a satellite of the dollar after the American experiments had taken decisive form, it is possible to say either that the dollar area had absorbed the sterling area, or vice versa, according to one's national outlook. Thirdly, there was the gold bloc, principally France, Italy, Holland, Belgium, Czechoslovakia, Switzerland, and Poland, clinging precariously to their pre-1931 gold parities and feeling the full force of the Anglo-American conflict. Fourthly, there were the exchange control countries, principally the great debtor nations, and the most important section of this group was Germany and the Central and South-eastern European countries. Most of these countries had special trading relations with Germany and were obliged, after she had instituted a rigorous system of exchange control, to enter into Clearing

Agreements with her of a kind which proved in most cases to have a decisive effect upon their general trading positions as they enabled Germany to exercise a type of price discrimination through the clearing system which was narrowly nationalistic in character. The whole scheme of Exchange Control and of Clearing Agreements at the best could have been only a temporary defence against the risk of a serious drain of capital accompanied by a rapid internal inflation. It could provide no permanent solution of the difficulties of the countries resorting to it. It was, however, the inevitable and necessary answer by the debtor countries to the Exchange Equalization Accounts of the great creditor powers who were bent upon maintaining a low external value for their currencies while at the same time preventing any export of capital. Fifthly, there were the silver-using countries who had up to this date escaped relatively unscathed from the gold deflation of the 1929-33 period.

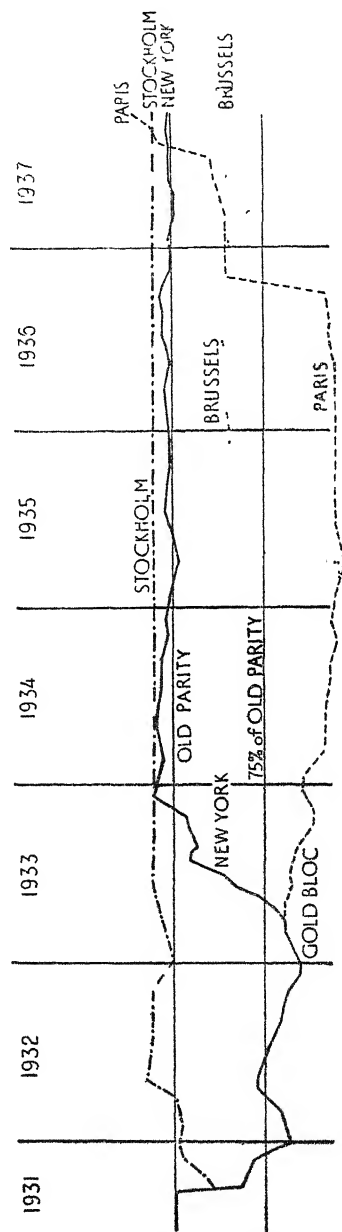
By the end of 1937, there had been marked changes in this grouping. Its transitory nature and the lack of policy in the intervening period were becoming increasingly apparent. The first to disappear was the silver-using group when Mexico and China became assimilated into the dollar-sterling group. This development was brought about by the American silver buying policy which forced up the dollar price of silver through the early part of 1935 and embarrassed both Mexico and China, who were threatened with the danger of an entirely unnecessary deflation as their monetary reserves were exported to the United States. America herself came rapidly to the aid of Mexico, whose currency was linked to the dollar, and after a period in which attempts were made to check the export of silver from China by prohibitions and by taxation, the Chinese currency was loosely associated with both the dollar and the pound as one part of what was probably a coherent plan for the economic reconstruction of China. This plan has been cast into the limbo by the Sino-Japanese war and the future of the Chinese currency is once more wrapped in obscurity. But the silver group has probably disappeared finally and the consequent realignment of the currencies concerned is one of the few constructive events of the period. It was probably made possible by indirect Anglo-American

co-operation which has been cheated of further practical results by the deplorable international situation.

The Exchange Clearing group has tended to break up. One by one Germany's customers became disillusioned at the extent to which the Exchange Control system was used to discriminate in prices paid for imports and charged for exports. The system really rested upon the necessity for those countries which had a positive balance of payments with Germany to enter into clearing arrangements with her to secure the "liquidation" of their balances. But, as the report of the Financial Committee of the League of Nations showed, the effect of these clearing arrangements was to turn positive into negative balances or to secure the liquidation of the frozen balances upon terms which became increasingly unsatisfactory to the countries "enjoying" them. Austria emancipated herself from the system, Yugoslavia terminated her arrangements and Turkey virtually broke away in 1937. The enthusiasm with which the system was first greeted as a new and important discovery in the field of exchange management has given way to general disillusionment. And when world prices of primary produce rose the exporting countries naturally looked to markets in which they could obtain free exchange for their products instead of payments in blocked currency which can only be used to purchase goods the prices of which are virtually dictated by the seller. With the renewed fall in prices late in 1937, however, and in the absence of adequate positive help from the creditor nations, the system tended to be reinforced, with economic and political consequences which are still unpredictable. British monetary relations with this group of countries has been for the most part negative, save in so far as the increasing devaluation of the pound which reached its lowest point in early March, 1935, increased their difficulties and compelled them to strengthen their controls in attempts to avoid general deflation as the gold prices of their exports were forced to lower levels.

It was, however, the collapse of the third of the groups, the gold bloc, which finally compelled the British authorities to take positive action in September and October, 1936. The regulations of the American Treasury with regard to the sale of gold

VALUE OF £1 IN CERTAIN FOREIGN CENTRES 1931 TO 1937
(Monthly average of mean daily rates)



following the revaluation of the dollar in January, 1934, obliged the British authorities, as we have already seen, to concentrate the operations of the Exchange Equalization Account upon the franc. So long as Paris observed the obligation to buy and sell gold at fixed prices on demand, the normal gold standard link existed between the dollar and the franc, and by making arbitrage transactions profitable the British authorities could influence the dollar-sterling rate by operating upon the sterling-franc rate. The accompanying chart shows how the franc value of sterling was allowed to sag throughout 1934 and early 1935 until the dollar sterling rate came back into a fairly close relationship with its old parity. This development, which may or may not have been the result of deliberate policy in London, maintained and increased the pressure upon the gold bloc and also tended to keep the London price of gold moving up until it had become the equivalent of the new American price of \$35. The positive achievements of British action during this period were, therefore, threefold: first, the degree of undervaluation of the dollar in respect of all sterling area currencies was somewhat reduced, secondly, the holding of private hoards of gold in London was made very attractive to non-Britishers, and thirdly, the break-up of the gold bloc was rendered practically inevitable.

However desirable the realization of the first achievement may have been, the second and third are closely inter-related with one another and greatly complicated in 1937 the task of finding a satisfactory solution to the monetary situation. British nationals cannot safely hold gold bullion in excess of a sum of £10,000, as they may be required to sell any excess gold to the Bank of England at its statutory price. A discreet question addressed to the Chancellor of the Exchequer and an equally discreet reply made it appear that this law would not be enforced against foreigners. As the United States forbade the hoarding of gold in America, London became the centre in which it was possible to hedge against the impending collapse of the gold bloc currencies. This element in the situation alone would have caused a movement of substantial balances into London, and the willingness of the British authorities to allow the sterling price of gold to creep up to the new American price made the

transactions profitable. When the Americans in their turn used the free London bullion market as a means of repatriating balances of sterling acquired to "keep down the dollar," a very one-sided situation slowly developed which was characterized by a persistent premium over the dollar-sterling rate of exchange in the gold price made daily in the London bullion market. Holders of and dealers in gold came, through 1935 and 1936, to regard this premium as something inherent in the new system and an enormous speculative position in gold and in gold-mining securities was apparently built up. This position rested partly upon a demand to hold gold in London in anticipation of the break-up of the gold bloc and partly upon the willingness of the British authorities to see the dollar-sterling rate of exchange restored to approximately its old parity.

By the end of 1936, the effects of the negative policy began to come home to roost. The gold bloc had collapsed and a new gold standard system resting upon the Exchange Equalization and Stabilization Accounts in London, Paris, New York, and elsewhere had been set up. The persistent upward movement of the sterling price of gold was checked and profits began to be taken by some of those who had bought against the impending fall of the gold currencies. The demand for gold received a double check and the problem of the so-called "surplus" gold production became acute.

As early as February, 1934, Czechoslovakia had left the gold bloc, in the spring of 1935 Belgium revalued her currency at approximately 80 per cent, Poland instituted a system of exchange control in April of the same year, and finally in September, 1936, the franc collapsed and with it not only the remains of the gold bloc, but also the system of "exchange equalization" which had been set up in London and Washington. The operation of this system had depended upon the maintenance of a free gold standard by at least one great financial power and when the franc collapsed exchange equalization became impracticable. Faced with this situation, which marked the failure of the previous policies of both of them, the British and American authorities were compelled to change their attitude and to co-operate with one another. Fortunately the French Government under

M. Blum showed a capacity for constructive international action which has been all too rare in the field of monetary management since the politico-economic crisis of the summer of 1931. Instead of presenting the two great powers, whose policy had so largely contributed to his own discomfiture, with a *fait accompli* which would have caused them considerable embarrassment, M. Blum gave an ample period for discussion and for preparation before he took decisive action. His agents had visited Washington shortly after he came into office and he himself visited the British authorities in early July with the result that arrangements were made well in advance to assist London and Washington to face the situation which would arise from the suspension of the gold standard in France and the revaluation of the franc.

At a time carefully chosen so as to cause a minimum of disturbance to business, simultaneous declarations on monetary policy were issued in London, Paris, and Washington. In these declarations the three governments undertook not to depreciate their currencies in order to obtain advantages in export markets, to co-operate with one another in monetary affairs, and to do their utmost to remove obstacles to trade. The Assembly of the League of Nations, which was in session at the time when these declarations were made, took cognizance of, and in effect approved, them; a further object lesson in the importance to international relations of national monetary policies and a further contribution by M. Blum to the cause of international order. The French Parliament approved of the devaluation of the franc to the level previously adopted by Belgium and at the same time placed an embargo upon the free export of gold, and a tax upon capital profits arising out of speculation in anticipation of the devaluation, and then set up an Equalization Account.

While this stage in the proceedings was being completed, the British and American Treasuries were preparing to do their share to remove the deadlock which the undue nationalism of each of them had helped to create. Both Treasuries found themselves stultified by the new situation in Paris. Neither could use its Exchange Account because balances acquired in the course of dealings could not be repatriated. The Bank of England and the British Equalization Account were under no obligation to

sell gold to anybody at all save when the latter chose to do so. The American Treasury could only sell gold to those Treasuries which undertook to sell gold freely to all other Treasuries and central banks at a fixed price in terms of their local currencies.

It is difficult to believe that these regulations were not designed to force the British back on to a fixed gold standard. But with the collapse of the franc they effectively prevented either of the equalization accounts dealing at all unless it chose to run the risk of holding an open position in a foreign currency. To prevent the now inevitable deadlock, both Treasuries gave way a little. They issued on 12th October, in somewhat similar terms, declarations that they were willing to sell gold to other Treasuries or central banks but only upon a day-to-day basis. The American Treasury gave way in so far as no agreement was reached as to the price at which the British authorities were to sell gold, and the British gave way because they now undertook a limited obligation to sell gold. The other ex gold-bloc countries which had instituted Exchange Accounts gave similar undertakings, so that by the end of October, 1936, a new gold-exchange-stabilization system upon a twenty-four hour basis was in operation.

No agreement about the rate of exchange between the principal currencies had been found possible, but as the Americans adhered to their fixed dollar price for gold, future fluctuations could only be small so long as the agreement was kept. The London price of gold and the sterling area exchanges were loosely tied to the dollar and had to be kept so tied if London wished to continue to use its Exchange Equalization Account.

In comparison with what had gone before it, this agreement was hailed with relief as an important step in international economic reconstruction. But in practice it has hardly justified the high hopes that were based upon it. Uncertainty has reappeared in a new form and is concentrated largely upon the price of gold and upon the future output of the metal. In some respects the agreements enabled the authorities to secure a more effective command of the situation. Now that the American authorities could sell any sterling balances acquired in a day's trading to the British authorities in exchange for gold at the price made at the fixing, they no longer needed to deal direct in the London bullion

market themselves and they discouraged their own banks and others from doing so as well. There came, therefore, to be a closer relationship between the prices made at the daily fixing for gold and the dollar-sterling exchange. Moreover, the premium tended to contract as the hoarding demand disappeared, and it was necessarily replaced by a discount when dishoarding began. This was a process in which neither the British nor the American authorities would wish to interfere. Moreover, it had become clear that there were likely to be in the future only relatively small movements in the rate of exchange between London and New York and that the American authorities could not adhere to the Treasury declaration, which could be repudiated at twenty-four hours' notice, if there was any tendency to let the pound fall much below its old parity of \$4.866. The prospects of any further gradual upward movement in the London price of gold disappeared, the need for hoarding gold in London as a hedge against the collapse of the gold bloc was substantially reduced and the whole foundation of the "speculative" position in gold was knocked away for the time being.

But in the meantime the effects of the Anglo-American non-co-operation of the preceding years had made themselves felt in the form of a very greatly increased output of newly-mined gold, and the newly introduced system had to face a difficult problem which was the result of previous short-sightedness. As the sterling price of gold stopped rising, the gold boom broke, large stocks of hoarded gold appear to have been liquidated in a hurry and two or three "injudicious" statements were sufficient to create a scare that the price of gold was to be reduced in London and Washington.

Meanwhile in both countries there was growing embarrassment at the increasing supplies of gold which both alike found it necessary to absorb in order to maintain their currency policies. The United States was able to sterilize a small amount of the gold directly by opening a special account through which gold was paid for by Treasury Bills instead of Treasury certificates. The raising of reserve requirements of member banks was also resorted to as an indirect means of sterilization. London adopted what is in practice a similar method by reducing the Bank of

England's fiduciary issue to £200 million. Both these expedients tend to increase the overall costs of banking services, and as the prospects of making further profits out of the operations of Equalization Accounts are becoming increasingly remote, there is an increasing likelihood that the authorities both in London and in Washington may find that they have, after all, a real community of interest so that the twenty-four hour gold clearing agreement may be widened out into something more extensive and more permanent in character.

Meanwhile certain limited improvements have taken place in the general situation.¹ The scare about the price of gold has helped to frighten a certain amount of gold out of its London hoards, thus tending to increase official control of the whole situation. At the same time the market has been obtaining experience of the behaviour of the London price of gold under the new system. It should now realize the significance of that price being at a discount on the dollar-sterling parity price when the net daily movement in the exchange market tends to be adverse to America. A substantial discount may develop before it is necessary for the Equalization Account to interfere because under the system set up after the Treasury declarations of 12th October, 1937, the authorities must intervene only when it is necessary to obtain gold to clear the balance acquired in the previous twenty-four hours by the other funds. If these do not need to operate to keep down their own currencies, there will be no balance to clear upon the following day and the sterling price of gold must be left to fall to a level in which the market can resort to arbitrage transactions. Under present conditions of uncertainty, however, it is difficult for the market to calculate at what prices these transactions become profitable because insurance against alterations during shipment in the Treasury prices of gold are practically unobtainable. So long as the Treasury agreements are only upon a twenty-four hour basis, this situation must persist and movements in the market price for gold in London are likely to be upon a larger scale than the changes necessitated by any fluctuations that may occur in the principal exchanges. If, however, the British authorities would fix a selling price for gold for each

¹ This was written in November, 1937

period of twenty-four hours, this step alone, without committing them as to future policy, would enable the present arrangements to work more smoothly. The general situation may be eased if the political and economic position in France is stabilized so that there is a substantial reverse flow of capital and gold to France. If such a development occurs, however, it will only conceal and will do nothing to solve the problem of the increased short-period variability of the London gold price as compared with the exchange. That, and the inherent difficulties in the great increase in gold output, remain as the two great achievements of the Anglo-American monetary discords during the period of recovery.

PART II
SEPARATE INDUSTRIES

AGRICULTURE—(A) GRAIN AND
OTHER CROPS

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INTRODUCTION

I WHEAT

II BARLEY

III. OATS

IV. SUGAR BEET

V. POTATOES

VI. OTHER CROPS

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(A) GRAIN AND OTHER CROPS

INTRODUCTION

THE policy adopted by the Government to give assistance to agriculture in the crisis was many-sided. Farmers themselves would have preferred a general tariff policy, but the effects of this on certain commodities—wheat, for example, of which four-fifths of requirements are imported—would have been to raise prices to the consumer out of all proportion to the advantages to the home producer. More recently, the farmers, encouraged by what they believed to be a pronouncement by Mr. Walter Elliot, then Minister of Agriculture, have modified their demands for straightforward tariffs in favour of the levy-subsidy. This would operate by the imposition of low tariffs on commodities, the proceeds of which would then be employed to subsidize the home production of them. Taking wheat again as the extreme example, a tariff of 10s. a quarter would be needed to raise the home producers' price by 10s., and this would raise the price of all wheat by the same sum. But a duty of 2s. distributed amongst home producers would give them the equivalent advantage, whilst raising the price of wheat to consumers by no more than 2s. The nearest approach to the application of this policy was made with beef, the Government taxing imports and giving feeders a subsidy, but there is no interdependence between the amount collected by the duty and the rate of the subsidy.

This chapter is concerned only with crops, to which six different principles of assistance have been applied.

(a) A guaranteed price for a specified quantity of the product. (Wheat.)

(b) A minimum price. (Barley and oats.)

(c) A subsidy on the manufacture from the crop, combined with a reduced excise duty. (Sugar beet.)

(d) Producers' control of the quantity of the home product marketed, combined with Government control of imports (Potatoes.)

(e) Producers' restriction of production, combined with a duty on imports (Hops)

(f) Import duties (Horticultural products)

The Agricultural Index Number of prices continued to fall until 1933. In that year it touched 107, by contrast with the basic period 1911-13, a fall of 37 points since 1929. Thereafter, the recovery in market prices is reflected in a fairly steady rise to 133 by the end of 1937. In 1933, however, the first effect of State assistance was felt, and this turned the Market Price Index of 107 into a British Farmers' Index of 111, and the rise from that year has proceeded steadily, though not quite uniformly with the rise in the Market Price Index, until the end of 1937, when the figure was 137. The following table shows these changes, together with the changes in the price index numbers of wheat, barley, oats, and potatoes

INDEX NUMBERS OF THE PRICES OF AGRICULTURAL PRODUCTS
(1911-13 = 100)

Year	All Agricultural Products		Wheat		Barley	Oats	Potatoes
1929		144		130	125	125	117
1930		134		105	100	87	96
1931		120		76	100	88	188
1932		112		78	96	99	197
		+ subsidies		+ subsidy			
1933	107	111	70	128	100	80	104
1934	114	119	64	125	109	88	119 ¹
1935	117	123	68	118	100	94	133
1936	122	126	95	123	104	89	184
1937	133	137	123	131	138	121	179

I WHEAT

Bumper harvests and the restriction of markets together had caused an accumulation of supplies such that the market price of wheat was halved between the years 1929 and 1934. As already related, the Government enacted a measure which became law in May, 1932, the Wheat Act, for the relief of home producers.² A standard price of 10s. per cwt. was guaranteed to registered

¹ Prices first affected by the Potato Marketing Scheme.

² See *Britain in Depression*, p. 64

growers, the difference between this figure and the average market price for the year being met by a levy on all flour delivered for consumption in the United Kingdom. To prevent undue expansion of wheat production, the Act provided that the full deficiency payment should not be made on more than 27,000,000 cwt. Thus, in any year in which production exceeded this figure, the deficiency payment to each farmer would be proportionately lower.

The wheat crop harvested in 1932 was the first for which farmers received deficiency payments under the Act. Under the stimulus of price, the acreage rose rapidly. From a total of 1,200,000 acres in 1931 it had risen to 1,760,000 acres in 1934, an increase of 46 per cent in three years. By 1937, there had been a slight reduction to 1,731,000 acres, which was still 44·2 per cent above the acreage in the low record year of 1931. The following table sets out the statistics of production and payment under the Act.

Harvest Year	Sales of Wheat	Average Sale Price	Deficiency Payment	Average Return
	cwt	per cwt s d	per cwt s d	per cwt s d
1932	20,400,000	5 4 6	4 5 25	9 9 71
1933	29,570,000	4 7 03	4 10 30	9 5 93
1934	35,920,000	4 10 87	3 9 55	8 8 42
1935	33,650,000	5 9 23	3 4 26	9 1 49
1936	23,713,000	8 9 92	1 1 53	9 11 45

From this table two things may be observed, first, how production has been stimulated, with the result that the nominal standard price of 10s per cwt fell to an actual average farmers' price no higher than 8s 8d. in 1934, second, that the recovery in the market price since 1933 has reduced the deficiency payment each year. For the harvest of 1933 it amounted to £7,180,000, and this figure had fallen to £1,337,000 for the harvest of 1936. There was no corresponding gain to the consumer, however. On the contrary, what was saved in the deficiency payment owing to the rise in market prices represented an extra cost five times as great in the total expenditure on wheat.

One merit of this form of protection for wheat growers is that

it did not eliminate competition amongst growers or place a premium on inefficiency. The limitation of the quantity upon which the full deficiency payment was made means that if the guaranteed price was higher than necessary to give the efficient wheat grower a fair return, the consequent expansion of production beyond the statutory limit for the full guaranteed price would continue to the point at which the actual return to the farmer had fallen to a fair figure, low enough to eliminate the inefficient. In other words, competition still fixed the price which the farmer received.

The consequent failure of the Act to give growers the full 45s a quarter, or 10s a cwt, which they had expected, led to a demand for the abolition of the limit of 27,000,000 cwt. Farmers, in short, wanted an unqualified guaranteed price, and they succeeded so far that by the Agriculture Act, 1937, the limit of 27,000,000 cwt. was raised to 36,000,000 cwt. Seeing that in 1932 the total sales of wheat were no more than 20,400,000 cwt., and that in the peak year, 1934, they were no more than 35,920,000 cwt, it may be expected that the extension of the deficiency payment limit to 36,000,000 cwt. will be tantamount to giving a guaranteed price.

II. BARLEY

Britain produces more than half its total supply of barley. Barley, for practical purposes, is two crops—malting barley and feeding barley. Malting barley commands the higher price, of course, but there is no certain market for it, and in a year in which both yield and quality are high, it may happen that the brewers' demands are satisfied before the quantity available is sold. All that is surplus to the maltsters' requirement must be used for cattle feed.

Prices for malting barley are subject to rather violent fluctuations. Following the depression, an attempt was made in 1933 to improve and to steady them by a voluntary agreement with the brewers to use a fixed proportion of home-produced barley in brewing. But farmers have been dissatisfied with the results. Under the Import Duties Act, barley has been subject to an *ad valorem* duty of 10 per cent, but efforts made by growers to

secure a tariff up to 2s 6d per cwt. on imported barley, which were begun in 1933, have been unsuccessful. In 1937, however, the principle of a standard price for a standard acreage of barley was adopted. By the Agriculture Act of that year, it was provided that there should be a standard price of 8s per cwt. and that an average yield of 6 cwt. per acre should be assumed. On this basis, there will be a payment to the barley grower equal to six times the difference between the standard price of 8s per cwt. and the average market price, for each eligible acre of barley grown. If the total acreage eligible for subsidy should exceed the national standard acreage, the rate of payment will be reduced proportionately, and there is the proviso that the total amount of the subsidy may not exceed the sum of £1 per acre. Further, farmers who are in receipt of the wheat deficiency payment are not eligible for the barley subsidy.

This scheme differs in principle from the wheat subsidy scheme in that it is less a guarantee of profitable prices to the efficient grower than an insurance against a possible loss if prices fall.

III. OATS

The index number of the prices of oats was no higher than 80 in 1933, compared with the 1911-13 standard. More than 90 per cent of oat supplies are home-grown and more than 90 per cent of the imports come from Canada.

Under the Agriculture Act, 1937, the same guarantee as the barley growers have is given also to growers of oats, with identical provisos and reservations. Prices both for barley and for oats are well above the level at which these subsidies would become operative, so that the benefits of the Act cannot yet be gauged. Farmers, however, are disappointed that they are called upon to choose between the wheat subsidy and that on barley and oats.

IV. SUGAR BEET

Sugar beet production had never suffered in the days of depression, the crop being indirectly subsidized. Indeed, such was the security which it represented that arable farmers turned to it more and more, and the acreage rose, year by year, from none at all in 1925 to more than 400,000 acres in 1934.

Under the British Sugar (Subsidy) Act, 1925, the production of sugar and molasses in Great Britain was to be subsidized at a decreasing rate for a period of ten years ending 30th September, 1934. The idea was, of course, that though the industry should be self-supporting when established, it would need assistance in the earlier years while farmers and factory managers gained experience of a new crop and of a new manufacturing process.

In April, 1934, when the subsidy period was nearing its end, a committee of three was appointed to review the whole situation and to make recommendations as to the future. It has been noted that under the stimulus of the expiring Act, and with unremunerative prices for other arable crops, the cultivation of sugar beet had assumed very large proportions; further, much money was invested in factories for the production of sugar from it. But the expectations of Parliament had not been fulfilled, and when the committee was appointed, it was common knowledge that if the subsidy were allowed to run off, the industry would go with it.

The committee were unable to agree upon the continuation of assistance. The chairman and one other member were prepared to accept the consequence of its withdrawal, holding that the advantages of the industry were insufficient to justify its renewal. The third member took the opposite view, and majority and minority reports were presented. All, however, collaborated upon the construction of a scheme for the future conduct of the industry if the Government should decide to continue its support.

For some reason, the work of this small committee occupied a very long time. It did not report until March, 1935, and prior to this the Government had to pass a special Act, the British Sugar Beet (Subsidy) Act, 1935, to continue its temporary policy for another year. The majority report suggested that neither the agricultural nor the non-agricultural advantages were sufficient to justify the expenditure involved, and it concluded that the principal value of the industry was as a relief measure. Even as such, the majority considered that it had proved unsatisfactory, for the cash payments to farmers for beet had only just equalled the assistance given to the factories for extracting sugar. Thus,

State assistance was not adding something to the value of a crop which anyhow would have had a commercial value. Rather was it almost wholly creating its value.

The Government decided, however, to continue to assist the beet sugar industry on agricultural grounds, and in 1936 it passed the Sugar Industry (Reorganization) Act. Under this there is no limitation to the period of assistance, but the subsidy is confined to the equivalent of 560,000 tons of white sugar per annum. The rate of assistance is determined by the Minister of Agriculture, upon certain standard conditions, in particular the average price of raw sugar. The limitation of tonnage of sugar is, in effect, limitation of acreage of beet, the quantity of sugar specified above being the estimated production of 375,000 acres, which, though 7 per cent below the record year of 1934, is more than has been grown in any other year.

These provisions of the Act made the farmers' position fairly secure, and there has been no difficulty in maintaining the full acreage of beet. Of the rest of the Act, the most important part was the rationalization of manufacture, for it required that all the factories then operating were to be amalgamated into a single corporation, the British Sugar Corporation Ltd, under the supervision of a permanent Sugar Commission. At the present time, the subsidy to home-grown sugar is about £2,750,000, while the loss of revenue owing to abatement of excise is about the same amount.

V. POTATOES

The position of the potato industry in Great Britain at the end of 1933 was that a Potato Marketing Scheme had been drawn up to regulate it, and that the Government was prepared to assist by the control of imports.

The Potato Marketing Scheme, as operated by the Potato Marketing Board, was designed to stabilize rather than to raise prices. The country is roughly self-sufficient in its potato requirements, except during the season of "earlies," and imports of these form only a very small part of the nation's total potato requirements. On the other hand, the potato crop is subject to very considerable seasonal fluctuations, so that a comparatively

trifling import in a glut year might knock the bottom out of the market, whereas prohibition of imports might send prices rocketing in a light year.

The Potato Marketing Scheme met the situation with considerable ingenuity and success. In the first place, an acreage quota was assigned to all registered growers, and none of them might exceed it nor would anyone be registered as a new grower, except on payment of a fee of £5 an acre to the Marketing Board for the excess or for the new quota. This was intended to stabilize the total acreage under potatoes at a figure which was known approximately to suffice for the national requirements.

In the second place, seasonal variations in home production were to be smoothed out by the regulation of the riddle. Potatoes are sorted so as to divide the smaller from the larger ones by passing them over riddles, and the proportion which the "ware" or marketable potatoes bears to the small and unmarketed potatoes depends upon the sizes of the holes in the riddle. In years of high yield, the Potato Marketing Board imposes a large riddle, and a smaller one in the years of less abundance. Moreover, as the keeping qualities of potatoes vary from year to year, the size of the riddle imposed may also be varied during the year, if, for example, it is known that a big crop is keeping badly and that supplies may be short before the new crop is ready.

In the third place, the effects of acreage control and riddle regulation are supplemented by the control of imports, which may be permitted to enter without restriction, or under licence, or not at all, according to the quantity of home production.

The Potato Marketing Board may have been fortunate in the circumstances of its work, but it can claim it has the best record, perhaps, of any of the major marketing schemes designed to bring about agricultural recovery. It has controlled supplies without restricting the quantity needed for consumption, wherein it has been more successful than the Pigs and Bacon Marketing Schemes. It has maintained remunerative prices for farmers without causing discontent amongst consumers, wherein it has been more successful than the Milk Marketing Board. It has conducted all its operations without imposing any charge upon the National Exchequer, potatoes being almost the only major

commodity the production of which is not subsidized in one way or another.

VI. OTHER CROPS

The recovery of the *Hop* market from the depression which fell upon it following the failure of an effort at voluntary co-operation, had begun before the period now under review. The history of the measures adopted has already been related.¹

Most *fruit*, *vegetable*, and *flower* crops enjoy fairly high protection by import duties. The first measure enacted for the protection of British agriculture had been the Horticultural Products (Abnormal Importations) Act, 1931. Under the Import Duties Act, 1932, a general *ad valorem* duty was imposed and an Import Duties Advisory Committee was set up to recommend revisions and alterations as the circumstances of particular products might require. Few people, probably, realize the value of the assistance now enjoyed by the market garden and horticultural industries. To give one example, the Cornish broccoli growers have a protection equivalent to some £25 an acre, and the index number of vegetables in 1936 was 155, by contrast with the basic period 1911-13, being the highest of any except milk and potatoes.

At the beginning of this decade, the plight of arable farmers was serious. Except for the sugar beet crop, market prices for almost everything were below production costs, and there was every indication of a wholesale abandonment of arable farming such as had not been seen since the great depression at the end of last century. To-day, as a result of subsidies, tariffs, import regulations, and control of home production, it may be said that ploughland farming is enjoying a period of prosperity, combined with the prospect of security, such as it has not known in living memory.

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AGRICULTURE—(B) THE MILK
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(B) THE MILK INDUSTRY

SINCE the previous review was prepared the Milk Marketing Schemes have dominated the markets and played the most important parts in shaping the policy and the future conditions of the milk industry. The English Scheme and that for the main area of Scotland work on the principles of finding markets for all the supplies offered for sale and of part pooling of returns, while the minor schemes of Aberdeen and the North of Scotland work on the principle of allotting "basic quantities" to individual producers and payment for these at prices near those realized for liquid milk with manufacturing prices for all supplies in excess. The main Scottish Scheme immediately developed manufacturing interests by taking over farmers' co-operative factories, but sold liquid milk on contract to distributors. Under the English Scheme the Board proceeded more by the method of collective bargaining, and has only recently developed any strong manufacturing interests. In all cases complete arrangements were made for the separation of the liquid and manufacturing markets for milk, for charging the highest possible prices in the liquid wholesale market, and for selling milk for manufacturing purposes by realization values according to uses, thus generally for fixing prices "according to what the traffic would bear." Under the English Scheme, with little manufacturing equipment and large amounts of surplus milk, the schedule of manufacturing prices has been important.

The general effects of the Schemes have been to draw all the available milk into the markets, to stimulate some increase in production, to maintain and on the whole slightly to raise retail prices, to assist movements towards improvement of quality, and generally to raise the status and the financial position of producers.

Technical progress in the chief exporting countries tended to increase supplies of milk products and there was a certain amount of concentration on the United Kingdom market. Imports generally tended to increase but were to some extent controlled by

duties and some were directly reduced by quantitative regulation. Imports of butter increased but those of cheese diminished. Imports of milk powder diminished, and home production increased. Imports of all kinds of condensed milk decreased while home production of the higher qualities increased. Imports of skimmed condensed milk which were subject only to the low duty of 10 per cent or the amount of the sugar duty whichever might be the greater, and were not subject to quotas, showed significant decreases as economic conditions improved (Appendix I).

The general supply position is perhaps best shown by the estimated quantities of supplies for consumption.

ESTIMATED CONSUMPTION PER HEAD OF POPULATION UNITED KINGDOM

Year	Margarine ¹	Butter	Cheese	Milk Equivalent of Milk, Butter, Cream and Cheese (Great Britain)
	lb	lb	lb	gallons
1929	—	17 7	10 0	76
1930	11 8	18 7	9 8	79
1931	10 3	20 9	10 0	85
1932	9 2	21 7	9 0	88
1933	8 4	23 5	9 0	93
1934	7 9	25 2	9 4	98
1935	8 4	25 2	9 1	100
1936	8 7	24 8	8 8	102

Supplies in terms of equivalent milk showed large increases, those in butter being most marked. Demand for butter is highly responsive to price and all supplies were readily taken into consumption. Demand for cheese is of more customary character, but it seems probable that a downward trend in consumption was checked for the time being by low prices.

The statistical position in respect of supply of fresh milk is not quite certain. In England and Wales supplies of graded milk

¹ Not strictly a dairy product, but as an important direct substitute for butter, included for comparison.

exempt from control of this Scheme have shown a large increase, outside the Scheme, while exemptions of other producers have been withdrawn and have increased supplies inside the Scheme. Nevertheless, the supplies recorded under the Scheme show most of the volume and the certain trend of the total. In the Scottish areas within the Scheme all supplies of milk are covered.

Increase in supplies was due in the main to the relative profitability of milk as compared with other branches of bovine production and probably to some extent to the low costs of purchased feedingstuffs, but the certainty of finding a market had a considerable influence. The actual increase was due to some extent to increase in the number of cows, and to newly established herds, but more to attraction of supplies from other uses, cheese and butter making and stock raising. Increases in supplies from areas in which milk selling was highly developed in the pre-Scheme period were comparatively small, while the large proportionate increases came from the less developed areas. A remarkable and somewhat unexpected increase occurred in the Eastern and more arable areas. None of the regions into which the country is divided showed any decrease until 1936. The increases in Scotland were smaller than those in England and Wales, and although there was a considerable increase in the Eastern and more arable areas at the beginning of the operation of the Scottish Scheme, this apparently soon slowed down.

Under the English Scheme there are three main categories of milk of which quantities are statistically recorded. The figures for quantities sold on wholesale contract are accurate and not subject to any important qualification except that in the first period of eleven months not quite all the supplies were traced. The figures for sales by producer-retailers represent the gallonages on which these producers pay levies, and are not to be regarded as of quite such a firm character as those for contract sales, and in this case they were subject to some increase by reason of removal of exemption of small producer-retailers in October, 1934. The figures for milk used in farm cheese making represent the gallonages on which the Board has paid subsidies to these producers in lieu of sharing in pool prices.

SUPPLIES OF MILK IN ENGLAND AND WALES
(Thousand Gallons)

Year	Wholesale Contract Sales	Licensed Producer- Retailers	Farm Cheese Milk	Total
1933-4	716,437	109,971	18,846	845,254
1934-5	853,706	113,249	14,005	980,960
1935-6	899,552	118,000	17,716	1,035,268
1936-7 ¹	867,865	115,000	19,623	1,002,488

Under all the Schemes the quantities sold for manufacturing purposes are known with complete accuracy, but as some milk is still sold on general contracts which do not require specification of use the figures for manufacturing utilization are not quite complete. There are no complete records of consumption or of sales of liquid milk to domestic consumers, hotels, restaurants, foodshops, etc., for sale to consumers. Under the Schemes all the milk is sold by contract at the contract prices fixed for liquid milk, and when manufacturing facilities are recognized by the Boards, buyers are allowed appropriate rebates on the quantities manufactured. Amongst the small buyers some milk bought at liquid prices is separated for cream or is otherwise manufactured.

The proportions manufactured in England and Wales have been—

PROPORTIONS OF CONTRACT SALES
(Per Cent)

Year	Liquid	Manufacturing
1933-4	73	27
1934-5	65	35
1935-6	62	38
1936-7	67	33

Taking into account the milk used for cheese making on farms, the proportions of liquid and manufacturing under all the Schemes together have not shown very important variations from these figures. Thus the main effect of increase in supplies was

¹ Provisional

that of increasing the quantity for manufacture, but on the whole the increase in sales for manufacturing was more marked in England and Wales than in Scotland. In England and Wales the proportions and quantities of milk manufactured into the cheaper products increased with total supplies and remained high even in 1936-7. High and low proportions in the main classes have been—

USE OF MANUFACTURING MILK IN ENGLAND AND WALES
(Per Cent)

	High	Low
Butter	34.2 (1936-7)	21.4 (1933-4)
Cheese	32.1 (1933-4)	20.4 (1936-7)
Condensed Milk	22.2 (1936-7)	19.2 (1934-5)
Milk Powder	4.4 (1933-4)	2.7 (1930-7)
Cream	19.6 (1933-4)	14.4 (1935-6)
Other Goods	1.8 (1933-4)	0.8 (1935-6)

In Scotland very high proportions of the surplus or manufacturing milk have been separated for cream and made into cheese, with butter in the next place of importance, and relatively small quantities of other goods have been made.

Part of the quantity for manufacture must be regarded as a reserve supply for the liquid market, but part of it is a supply which must always find manufacturing use while the recent relationships between total supply and liquid consumption continue. The necessary "reserve" has been estimated at 15 to 20 per cent of the normal liquid requirement and if any such proportions are correct it follows that the larger the liquid sales the greater the volume of reserve required and the greater will be any manufacturing industry which may be based on the reserve. If the normal liquid sales are relatively small, the reserve also will be small and may be used for the manufacture of cream and other of the higher priced products. But as the volume of the reserve increases, more milk will pass into manufacture of the lower priced products.

While information on consumption is now improved to some extent the Boards have no exact knowledge of final sales for consumption as liquid milk. There is a margin of uncertainty

about producer-retailers' returns and there is no knowledge of the amounts or proportions of milk which is manufactured by buyers without manufacturing permits. It was stated early in 1936 that "the volume of liquid milk consumed has increased slightly." "The probability seems to be that, had the prices not risen, there would have been a more marked increase of consumption in consequence of the improvement in the purchasing power of the public, but that any tendency towards greater consumption has so far been largely neutralized by higher prices."¹ Now it is claimed that an increase which began in 1936 has since proceeded at a more rapid rate. On the basis of present information there appears to have been a decrease in producer-retailers' sales in 1936-7 and an increase in wholesale contract "liquid" sales, with a net increase of nearly 4 per cent in England and Wales. It may be presumed that the bulk of this increase in liquid sales went into liquid consumption. The chief factors in the increase are sales of school milk, sales of milk to workmen in factories, mines, etc., and sales to milk bars. The net increase in sales to domestic consumers has been quite small and probably has been confined mainly to the areas in which industrial prosperity has been most marked.

The following are the most favourable estimates of consumption of liquid milk per head in England and Wales

	<i>Pints per head</i>
1933-4	0 38
1934-5	0 39
1935-6	0 40
1936-7	0 42

These estimates include graded milk which did not come under the control of the Scheme until the autumn of 1937.

The price structures under the Schemes are complex and for some purposes need detailed explanation, but the general position is that the Boards prescribe prices after negotiation with representatives of buyers, fixing firm prices for liquid milk and then prices or price-formulas for manufacturing milk in various classes. In order to ease their tasks of prescribing prices and of getting the highest possible returns for the liquid margins, the Boards

have also fixed wholesale and retail margins. Under the main Scottish Scheme returns are pooled, but there are some premiums payable to special classes of producers. Under the English Scheme individuals may bargain with buyers for level delivery premiums, and qualify for other premiums payable by the Board: then there is pooling of returns within the regions, and part pooling between regions through an inter-regional compensation fund. Early in 1935 it was provided that the variations between the price of one region and another should not exceed one penny per gallon. After the pool price for each region has been struck, transport charges are deducted and the net prices are paid to individual producers with any premiums each may have earned. From the producers angle the following figures summarize the results of the Scheme in prices.

PRICES PER GALLON

	Contract (Liquid) Prices	Pool Prices	Net Farm Price
	Pence	Pence	Pence
Pre-Scheme } 1932-3	13·70	11 60	10·00 ¹
1933-4	13·96	11 83	10 12
1934-5	15 08	11 99	10·16
1935-6	15 25	11 48	9·95
1936-7	15 25	11 99	10 46

These estimates for the year previous to the operation of the Scheme are on the generous side. Another estimate of average prices more or less corresponding to the subsequent pool prices is 10·88d. per gallon. Allowing for premiums the average net returns to producers would be one-fifth to one-sixth of a penny higher in the first two years of the Scheme and one-third of a penny higher than those shown in the other two years.

There is no doubt that in general the Scheme unproved the position of producers. But the effects of an increase of 13·5 per cent in sales of manufacturing milk in 1935-6 and of the decrease in the following year are clearly seen.

Except in the first year, the contract prices fixed under the main Scottish Scheme have been lower than those for England,

¹ Estimated equivalents

while pool prices also have been lower. Under the Aberdøren and North of Scotland Schemes the "basic" prices have been lower, but the differences between the basic and average yearly prices have been small, and farmers' prices under these Schemes have been relatively satisfactory. On the whole it appears that the Schemes improved prices for producers in Scotland.

As already explained, buyers pay for liquid milk the contract prices set out above, and, when they have recognized manufacturing facilities, prices which have varied from 9d. to 3½d. per gallon for manufacturing milk. The average realization values of manufacturing milk are set out below. As a State subsidy has been paid in assistance of the disposal of manufacturing milk the values credited to the pools, including the subsidy, are included for convenience at this point.

MANUFACTURING MILK IN ENGLAND AND WALES

	Average Realization Values Per Gallon	Values plus Subsidies (Values credited to Pools) Per Gallon
	Pence	Pence
1933-4	4 96	5 46
1934-5	4 81	5 68
1935-6	4 95	5 45
1936-7	5 75	5 80

In general there has not been any difficulty in selling milk to primary buyers at the prices fixed in England and Wales. There was a major complaint when the Board proposed to raise contract prices for the year 1935-6. This was referred to the Committee of Investigation, with results in favour of producers, and while the price was raised liquid sales increased in that year. Until 1936-7 the small buyers without manufacturing permits complained bitterly of prices, and doubtless suffered reductions in their margins while the manufacturing values of milk were at their lowest levels, but there is no public evidence of diminution of their numbers. There have been various arguments between the Board and manufacturing buyers on the prices for manufacturing milk and during part of 1935 and 1936 some of the smaller firms found difficulties in continuing and some ceased to do

business. But the probability is that the trade was moving away from the types of firms and plants which met the greater difficulties and their future disappearance was to be expected. On the other hand, except for short periods and small areas, other firms were generally willing and sometimes anxious to take the supplies. During 1936-7 there was a strong search for supplies and buyers were offering producers inducements to make contracts or to increase quantities. On the whole, the result appears to have been to improve manufacturing facilities and to throw the business more into the hands of the larger firms, especially those who have plant for varied forms of manufacture.

The pool prices, with the certainty of markets and payments, certainly attracted manufacturing milk from farms and reduced farm manufacture of both butter and cheese. In some cases improvement in quality of product occurred as a result of the transfer from farm to factory, but special arrangements were made to preserve farm cheese making by paying producers sums more or less equal to the difference between pool prices (less transport charges) and the farm value of milk for cheese making. Butter producers for a time unsuccessfully agitated for a similar provision.

Some of the prices for manufacturing milk in Scotland have been a little higher and others a little lower than those in England, but under the main Scottish Scheme realization values appear to have been very slightly lower. Manufacturing milk is of minor importance under the other Schemes. As previously stated, the Scottish Board began manufacturing at an early stage, and in spite of some difficulties has achieved considerable manufacturing success in the conditions under which the business had to be conducted. The English Board has recently developed considerable manufacturing interests, but its general policy appears to have been directed to the development of manufacture in the better equipped and larger of the privately owned factories. A number of farmers' co-operative factories in England and Wales found great difficulties in working under the conditions of the Scheme and some succumbed while one or two others have been successfully organized.

During the first winter of the operation of the English Scheme

the contracts specified that milk was not to be sold by retail at prices below those prevailing in the district. Somewhat generally the distributors' associations met and fixed retail prices, but the method proved unsatisfactory. For the remainder of the first year of the Scheme margins were fixed varying from 8d. in rural districts to 10d. a gallon in towns, and since then retail minimum prices have been fixed annually for different types of Local Government areas on the basis of population.

MINIMUM RETAIL PRICES AND MARGINS
(Per Gallon)

Type of District by Population	1934 (Summer) Pence	1934-5 Pence	1935-6 Pence	1936-7 Pence	1937-8 Pence
Minimum Retail Prices					
Less than 10,000 (Rural Districts)	20 67	23 33	23 33	23 33	24 33
Over 10,000	22 67	—	—	—	—
10,000-25,000	—	25 00	25 00	25 00	26 00
10,000-50,000	21 00	—	—	—	—
Over 25,000	—	26 00	26 00	26 00	27 00
S E Region	—	26 67	26 67	26 67	27 67
Over 50,000	22 00	—	—	—	—
Margins					
Less than 10,000 (Rural Districts)	8 00	8 25	8 08	8 08	8 42
Over 10,000	10 00	—	—	—	—
10,000-25,000	—	9 92	9 75	9 75	10 09
10,000-50,000	9 00	—	—	—	—
Over 25,000	—	10 92	10 75	10 75	11 09
S E Region	—	11 58	11 42	11 42	11 75
Over 50,000	10 00	—	—	—	—

Only minimum prices are fixed by the Board and these may be increased by individual firms or by agreement amongst retailers. These minima are also subject to reduction by the Board on application of a majority of the retailers and producer-retailers in any area. Considerable numbers of reductions have at times been made, but these have been mostly for small districts and have affected only a small minority of consumers. An inquiry in 1936 showed a large number of distributors charging retail prices higher than the prescribed minima ¹

¹ See Report of Consumers' Committee for England, 1936

Retail prices of milk have increased while prices of all foods excluding milk declined. The following index numbers indicate the general increase in retail prices of milk.

INDEX OF RETAIL PRICE OF MILK

October to September	Small Towns	Large Towns	General
1929-30	—	—	176.8
1930-1	—	—	173.7
1931-2	—	—	167.3
1932-3	—	—	165.7
1933-4	177.5	169.3	175.2
1934-5	184.8	177.2	180.9
1935-6	185.9	178.8	182.3
1936-7	186.3	178.9	182.4

Although the earlier of these figures show decline in prices they do not adequately represent some local breakdowns of the retail price structure or the general fears of producers and distributors of a collapse in the market—which greatly assisted the adoption of the Schemes and the working of the first contracts. On the other hand, the later figures scarcely indicate the full effect of increases in many rural districts where the highest proportionate increases have occurred.

Some final buyers of large quantities of milk, such as hospitals, especially those who had been able to take advantage of the breakdown of the market prior to control, have complained of large increases in prices. But generally every effort has been made to provide the special conditions applicable to large buyers consistent with the maintenance of the basis of the price structure.

Retail prices in Scotland have tended to be lower than the general level for England, but some increases have occurred there also.

There is no evidence in the statistics of sales of milk for liquid consumption or in statistics of consumption itself to show that increases in retail prices, except in some rural districts, curtailed consumption. The increases occurred at a time when the employment position was improving and the general purchasing power of the population was increasing. The increase during 1936-7 shows clearly the influence of these conditions on the sale

of liquid milk. But it may be argued that the increases in retail prices had important effects in retarding an increase in demand for liquid milk which might have arisen as a result of increasing purchasing power, increasing confidence in supplies and rising appreciation of the value of milk. And it seems probable that such an argument is well based. Except during the years 1931-3 the retail milk market had tended to be a rigid market for a number of years and many people believed that the demand was not responsive to price without any real test having been made of this theory. Retail prices have been subject to criticism on the grounds of social interest in the stimulation of consumption for safeguarding health, especially of infants and children, and of an assumed effect in restricting demand.

Wholesale prices of butter continued to fall until they reached the pre-war level in 1932 and fell again for two further years, showing a very little rise in 1935 and then continuing to rise. Wholesale prices of cheese fell to about pre-war level in 1934 and fell again in 1935, rose a little in 1936 and continued to rise. Wholesale prices of whole condensed milk fell to 1933, remained about steady in 1934 and then rose slightly. Values of unsweetened milk powder fell to 1933, rose a very little and remained steady. Values of unsweetened skimmed milk were about steady at a very low level.

Retail prices of dairy produce, except milk, continued to fall until 1934, showed a slight tendency to rise in 1935 and a more marked rise in 1936. Cheese showed a late recovery. Margarine, not strictly a dairy product, but very important as a substitute for butter, showed the latest recovery. Retail prices of milk are given with other retail prices to indicate the effect of the Milk Marketing Schemes in 1934.

In spite of the strengthening of the home producers' position and improvement in prices the State showed a desire to assist the industry in 1934 and producers were anxious to have the direct support of the State. The objects of State policy seem to have been those of (1) raising the values of manufacturing milk possibly for the immediate improvement of pool prices, but also to provide an opportunity for alternative enterprise to the depressed cattle industry with the least necessary depression of pool

RETAIL PRICES OF DAIRY PRODUCE

	Milk (quart)	Butter (lb)	Cheese (lb)	Margarine (lb)
	Pence	s d	s d	Pence
1929	6 $\frac{1}{4}$	1 11 $\frac{1}{2}$	1 2	7 $\frac{1}{2}$
1930	6 $\frac{1}{4}$	1 8 $\frac{1}{4}$	1 1	7 $\frac{1}{4}$
1931	6	1 5 $\frac{1}{4}$	10 $\frac{1}{4}$	7
1932	6	1 4	10 $\frac{1}{2}$	6 $\frac{3}{4}$
1933	5 $\frac{3}{4}$	1 2 $\frac{1}{4}$	9 $\frac{1}{2}$	6
1934	6	1 1	8 $\frac{1}{2}$	5 $\frac{1}{2}$
1935	6 $\frac{1}{2}$	1 2	8 $\frac{1}{2}$	5 $\frac{1}{2}$
1936	6 $\frac{1}{2}$	1 3	9	5 $\frac{3}{4}$
1937	6 $\frac{1}{2}$	1 3 $\frac{1}{4}$	10 $\frac{1}{4}$	6 $\frac{1}{4}$

prices, (2) increasing consumption of milk by stimulation of demands amongst special classes of the community, (3) improving the hygienic quality of milk and the health of dairy stock. By the provisions of the Milk Acts of 1934 and 1936 repayable advances were made to the Milk Marketing Boards to maintain standard realization of value in manufacturing milk at 6d. a gallon in winter and 5d. in summer, and these conditions now continue until the autumn of 1938. These advances were repayable by the Boards if between 1936 and 1940 the prices of milk for manufacture rose above a specified level. Liabilities under this arrangement began to accrue in 1937, when fresh arrangements were made, and apart from a sum of £150,000 for which liability for payment had been incurred before the 30th September, 1937, the Boards have been relieved of the liability for repayment of advances. Duties have been levied on imported dairy products (see Appendix) and producers have agitated for a "levy subsidy" system but without any effects except that of obtaining relief from repayment of advances on manufacturing milk and the continuation of the provisions on a subsidy basis.

Systems of licensing producers of milk of various recognized grades have been in existence since 1920. But the English Milk Marketing Board made the greatest advance as regards numbers when it started the Accredited Producers' Scheme in 1935. This scheme provides for the payment of a premium of 1d. per gallon to producers of milk of presumed "Grade A" standard, but some

of the standards and conditions of production were left to the determination of officers of Local Authorities, with the consequence that requirements in production vary from one county to another. However, the scheme does secure appreciable improvement in hygienic methods of producing and handling milk. Producers themselves provide the premiums out of the pool funds, so that their net value is lower than their nominal value, and while the accredited producers gain by obtaining accreditation the others lose by failure to obtain it. From October, 1935, to September, 1937, the number of accredited producers rose from 11,228 to 21,111. Something like one-third of the milk sold on wholesale contracts is now accredited.

The Milk Act of 1934 provided for the financial assistance and establishment of tubercle-free "attested" herds, not only for the purpose of providing a supply of tubercle-free milk but perhaps more for the purpose of establishing breeding herds which were free of tubercle. A premium is paid on all "attested" milk sold through Marketing Schemes, but some grievance has been felt that it was necessary to sell milk to obtain the benefits provided by this Scheme. Development under the scheme was very slow, and only 346 herds in England and Wales had been attested by the end of 1937.

Under the Agriculture Act of 1937 additional assistance is made available for extending the attested scheme, and provision is now made for the establishment of "eradication" and "attested" areas, in which there will be rigid control of all cattle and strenuous effort for the eradication of tubercle, and, when the "attested" condition is reached, rigid control to maintain freedom. A start has yet to be made in the establishment of an eradication area, but the work done in connection with attestation shows that there are a number of herds and some districts which are favoured with a very low incidence of bovine tuberculosis. High premiums will be payable on attested milk in the future.

In 1936 the system of grading milk under licences of the Ministry of Health was revised, "accredited" replaced the "Grade A" class, and the "Grade A Tuberculin Tested" and "Certified" grades were amalgamated in "Tuberculin Tested." Since October, 1937, the exemption from the control of the Milk

Marketing Scheme in England and Wales, granted in 1933, to what is now Tuberculin Tested milk has been withdrawn. Special contract and retail prices are fixed for this milk when it is sold under grade designation and premiums will be payable to producers.

The Milk Acts also provided moneys for the stimulation of consumption. The bulk of the expenditure is on the milk in schools scheme. School children are able to obtain milk at a special rate of $\frac{1}{2}$ d. per one-third of a pint, which is equivalent to 1s. a gallon. The retailers agree to accept 6d. a gallon for the services they render. The quality of the milk supplied needs to be approved by the appropriate Medical Officer of Health. All full-time grant-earning schools qualify for the special supplies, together with certain instruction centres for unemployed young persons. In England and Wales it is estimated that during 1937 at least 2½ million school children were being supplied with milk under this scheme. In Scotland also considerable progress has been shown and 92 per cent of the supply provided for the children is Tuberculin Tested milk. Both the English and Scottish Boards have undertaken experiments with a view to ascertaining the effects on the health of children of taking milk in varying quantities and qualities. The co-operation of school medical officers and teachers has been elicited in this work.

Working in conjunction through the National Milk Publicity Council jointly supported, the English Board and distributors have launched schemes for the supply of milk to factory workers, miners, and office staffs. Similar projects are being prosecuted in Scotland. These schemes were only of a temporary character when first attempted in 1936, but the success achieved has justified their continuation.

Schemes for the provision of cheap milk to poor people have been introduced in some of the more depressed industrial areas. Milk is supplied to expectant and nursing mothers and to children under school age at 2d. a pint. In 1936 and 1937 plans of this character were inaugurated in Rhondda (South Wales), Jarrow, and Newcastle-on-Tyne. The cost of operating these schemes has been distributed between the Commissioners for Special Areas, the Board and the local milk distributors. The response

has been extremely good, large numbers have taken advantage of the facilities, and the consumption of milk in the areas has increased appreciably. The Scottish Boards have also attempted similar Schemes and are planning to extend them.

The milk-bar movement has also made great strides. In September, 1937, there were over 900 in England and Wales, and their popularity is extending. They have been responsible to some extent for the increase in consumption of liquid milk, but possibly their propaganda value is of greater importance.

Thus both producers' and State funds have been used for the improvement of the quality of milk supplies and in efforts to supply special classes with their requirements of milk and more generally to stimulate demand. The machinery provided by the Schemes makes social effort of this character more practical and more economical than when the trade is unorganized. Joint contributions of producers and distributors support advertising campaigns.

There have been many complaints against the Schemes and the Boards charged with the duty of operating them. Amongst producers there have been serious specific complaints from the East of Scotland, Yorkshire, and Monmouthshire, and from producer-retailers in Lancashire. Producers of the East of Scotland complained that the system of pooling worked to their disadvantage and to the advantage of predominating numbers in the South-western area. After reference to the Committee of Investigation the position of these producers was somewhat relieved.¹ Certain producers in the West Riding of Yorkshire who had been able to secure relatively high prices in pre-scheme days, had been given a special price under the war-time control, and claimed to have high costs of production, desired either special consideration or the creation of a small region in which prices would be higher than those of the North-western region. No special relief has been provided in their case, and it must be presumed that most of them were able to adjust production costs to the new price conditions and some by seeking premiums were able to adjust returns to cost. Complaint from Monmouthshire

¹ Statutory Rules and Orders No. 1437 and No. 1438, 1934, and No. 1246, 1935.

arose from the inclusion of this county in the West Midland region which proved to have very high proportions of manufacturing milk and thus to suffer low pool prices, and complaints came largely from producer-retailers who were called upon for heavy levies. Again no special relief was afforded. Producer-retailers of Lancashire, working in a relatively depressed area and one which has not enjoyed its full meed of general economic recovery, have at various times been concerned with the damage caused or expected to be done to their trade by increases in retail prices, but adjustments have been frequent and a large number of special determinations of retail prices by the Board have applied to Lancashire. The changes made in the contract for 1937-8 have again caused trouble in this area.

Somewhat more generally, producers near consuming centres have at times felt that the contributions their milk was called upon to make to the pool prices of other regions were too heavy. On the other hand, producers in the western part of the country have asked for the establishment of a national pool, and, as previously mentioned, succeeded in getting a decision which reduced the differences between pool prices to amounts not exceeding one penny per gallon. There cannot be any doubt that a number of producers who were in relatively favourable positions in the pre-scheme days, not only in special areas but in small pockets in many parts of the country, suffered relatively under the schemes. The assessment of the amount of absolute loss depends upon the estimate of the continuance of their privileges in view of the market conditions prevailing before the inauguration of the schemes. With increasing competition and the application of motor transport to the milk trade it appears that in many cases the special advantages were certain to diminish or disappear. Nevertheless, some of these producers managed to alleviate the new conditions by obtaining premiums while others made adjustments in methods of production. There has been some discussion and suggestion of adjustment of rents in these cases but little is known of any general movement of this character.

Producer-retailers were also somewhat generally aggrieved by the amounts of the levies they were called upon to pay, and by the increase in these levies as the contract prices and supplies

of manufacturing milk both increased. Again some producer-retailers were able to earn the allowance of the level dairy premium and since 1935 the accredited premium. But amendment of the Scheme as regards producer-retailers became necessary in 1937 and their levies have now been fixed and reduced. When a poll of registered producers on the continuance of the English Scheme was taken, largely at the instance of producer-retailers, in 1935, a heavy majority voted for continuance; and there cannot be any doubt that producers would now make strenuous efforts to retain their Marketing Scheme.

For a time there were troubles between the Boards themselves on the grounds that milk from Scotland was sold into England at "cut" prices. These troubles were allayed by arrangements for transfer of specified quantities, and by payment of compensation for loss of market by the English to the Scottish Board. There were also complaints that the Scottish Board cut the prices of some milk products. On the other hand, the Boards have been instigators of and parties to agreements between home manufacturers and importers for the regulation of supplies and prices of milk products.

Distributors and manufacturers have complained of details of administration, of some features of the methods of price-fixing, and of the power given to producers' boards to prescribe prices; nevertheless, the majority of these also would retain the Schemes.

The Schemes and their Boards have somewhat naturally been subject to a considerable amount of ill-informed and sometimes prejudiced criticism. The legal basis of the Schemes and the powers and duties of the Boards are imperfectly understood by the general public. And in any case it is easy to arouse public feeling by statements that milk is being sold to makers of umbrella handles at 5d. a gallon while mothers are charged 2s. or 2s. 4d. for milk for babies. Though this is perhaps the most extravagant and ill-directed of criticisms there have been many of somewhat similar character. On the whole, criticism has been less well directed and less effective than it might have been.

The schemes have contributed stability and possibilities of ordered progress to an industry in which it might have been possible in such conditions as existed about 1933 to lose many

of the results of previous progress. They have assisted the development of a larger and more efficient manufacturing industry, and some manufacturing is an absolute necessity in a satisfactory and economical system of supply of liquid milk, though perhaps the determination of the size of such an industry should be a matter of public policy rather than of the policy of sectional producers' organizations. The Boards who have control of the main schemes are highly conscious of some criticisms on their presumed failure to pursue the interests of the organized community and of consumers in lower retail prices, and subject to doing their primary duty to the registered producers they are anxious to obtain increased sales of milk for liquid consumption.

The future of the milk industry lies largely in the result of testing the theory that the demand for milk shows very little if any response to changes in retail prices, or alternatively in finding methods of raising consumers' appreciation of milk and of stimulating demand at prices at or near recent levels. Cheap supplies of milk to special classes, such as infants and children of pre-school and school age, and nursing mothers, are partly a matter of social policy, but they may be also of importance in developing appreciation of milk and subsequent commercial demands. If this effect appears, however, it will be in the more distant future. Any important early increase in consumers' demands at prices which will cover production of regular supplies of high quality milk will almost certainly depend upon other movements. Milk bars and "industrial supply" schemes will assist, advertisement and demonstration will be useful, but the probability is that reduction of prices to domestic consumers must accompany these efforts if demand is to be stimulated effectively. Any considerable reduction of retail prices will require reorganization of the system of distribution with possibly some changes in technical methods of handling milk.

In spite of increasing and expanding efforts to improve the hygienic quality of milk the demand for powers of requiring pasteurization, latent for several years, is again appearing. It is proposed that powers of requiring pasteurization shall be given to local authorities, and although measures will be taken to slow down the application of compulsory pasteurization they appear

likely to become somewhat extensively used. When they are applied considerable changes in the structure of the distributive trade may be expected.

The chief immediate modification of the machinery of the Schemes now proposed is the appointment of a Permanent Milk Commission to "keep in review the production, marketing and consumption of milk (including the effect of prices on demand) and to be of general assistance to the industry," and to have as a primary duty the consideration of the improvement of milk distribution. It is not proposed to remove from Producers' Boards their fundamental and most important power of prescribing prices.

The milk industry, because of some features of the demand for milk, and because of the operation of the marketing schemes, enjoyed relative stability during the depression. Producers increased and then began to take steps to improve their output. They have established a system of ascertaining costs of production likely to lead to systematic study of management. Transport continued to improve and measures are being taken to reduce transport costs. Minimum wages in the distributive trade remained undiminished from 1923 to 1937, when they were increased. The manufacturing section was strengthened; while the distributive trade was able to continue improvement of its technical methods and was not compelled to make any radical alteration in its organization. The problems before the industry are largely those of avoiding the temptations to endeavour to preserve the *status quo* and of securing ordered progress at such rates as will satisfy the consuming public in its domestic and its politically organized forms.

APPENDIX I
'IMPORT CONTROL
DUTIES CHARGEABLE ON IMPORTED DAIRY PRODUCTS

Commodity	Foreign	Eire ¹
Milk . . .	10 per cent <i>ad valorem</i>	10 per cent <i>ad valorem</i>
Butter . . .	15s per cwt	10 per cent plus 30 per cent <i>ad valorem</i>
Cheese . . .	15 per cent <i>ad valorem</i>	10 per cent <i>ad valorem</i>
Cream . . .	10 per cent <i>ad valorem</i>	10 per cent plus 30 per cent <i>ad valorem</i>
Whole Milk		
Condensed		
Sweetened	5s per cwt plus any duty payable on sugar content	10 per cent <i>ad valorem</i> plus the duty payable on the sugar content
Unsweetened	6s per cwt	10 per cent <i>ad valorem</i>
Milk		
Condensed, Separated or Skimmed	10 per cent <i>ad valorem</i> or the duty payable on the sugar content whichever is the greater	10 per cent <i>ad valorem</i> or the preferential duty on the sugar content, whichever is the greater
Sweetened .		
Milk Powder		
Sweetened	10 per cent <i>ad valorem</i> or the duty payable on the sugar content whichever is the greater	10 per cent <i>ad valorem</i> or the preferential duty on the sugar content whichever is the greater
Unsweetened .	6s per cwt	10 per cent <i>ad valorem</i>
Milk		
Preserved, Other Kinds Unsweetened	6s per cwt	10 per cent <i>ad valorem</i>
Lactose . . .	3d a lb	3d a lb
Casein	10 per cent <i>ad valorem</i>	10 per cent <i>ad valorem</i>

¹ Imports from other British countries were free of duty except in two cases for duties on sugar content on a preferential basis. The Special Duties on produce from Eire were removed in May, 1938

VOLUNTARY REGULATION OF IMPORTS OF CERTAIN MILK PRODUCTS

Period	Percentage of Quantities Agreed upon with the Principal Foreign Supplying Countries, Compared with Supplies in the Corresponding Period of the Base Year, June, 1932, to May, 1933			
	Condensed Skimmed	Condensed Whole	Milk Powder	Cream
June-December, 1933	80	80	80	80
January, 1934	82½	80	80	80
February	80	80	80	77½
March	77½	80	80	75
April-June	77½	80	80	70
July-September	77½	80	80	66
September-December	70	70	75	65
January-March, 1935	70	70	75	65
April-June	60	65	70	60
July-September	60	60	65	55
October-December	60	60	65	50
January-September, 1936	60	60	65	50
October, 1936-March, 1937	55	50	50	50

APPENDIX II

IMPORTS OF MILK AND MILK PRODUCTS UNITED KINGDOM

NET IMPORTS OF FRESH MILK

	Gallons	Declared Value
		£
1933	753,000	28,000
1934	848,000	26,000
1935	388,000	15,000
1936	303,505	13,000

IMPORTS OF WHOLE CONDENSED MILK (SWEETENED)

Year	Condensed Milk (Sweetened)		Gallons of Fresh Milk Equivalent
	Cwt	Value	
1933	144,606	£ 237,005	3,904,362
1934	122,564	196,578	3,309,228
1935	87,709	145,517	2,368,143
1936	89,347	148,254	2,412,369

IMPORTS OF CONDENSED MILK (UNSWEETENED)

Year	Condensed Milk: (Unsweetened)		Gallons of Fresh Milk Equivalent
	Cwt	Value	
1933	380,851	£ 759,068	10,282,977
1934	342,001	626,643	9,234,027
1935	293,978	519,980	7,937,406
1936	232,103	364,115	6,266,781

IMPORTS OF SEPARATED OR SKIMMED MILK (SWEETENED)

Year	Cwt	Value	Gallons of Fresh Milk Equivalent
1933	1,917,789	£ 2,083,893	61,369,248
1934	1,628,200	1,985,130	52,102,400
1935	1,404,697	1,380,041	44,950,304
1936	1,363,344	1,464,296	43,627,008

IMPORTS OF MILK POWDER (NOT SWEETENED)

Year	Cwt	Value	Gallons of Fresh Milk Equivalent
1933	280,082	£ 469,155	33,329,758
1934	251,913	461,561	29,977,647
1935	219,144	390,284	26,078,136
1936	242,005	430,612	28,799,071

IMPORTS OF MILK POWDER (SWEETENED)

Year	Cwt	Value	Gallons of Fresh Milk Equivalent
1933	5,698	£ 25,641	450,142
1934	3,760	16,544	297,040
1935	5,583	24,007	441,057
1936	3,666	13,931	289,614

IMPORTS OF BUTTER AND CHEESE

Year	BUTTER		CHEESE	
	Cwt (000)	Value (000)	Cwt (000)	Value (000)
1933	8,832	£ 34,340	3,040	£ 7,612
1934	9,695	33,272	2,989	7,018
1935	9,608	39,328	2,714	6,649
1936	9,752	44,424	2,676	7,790

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AGRICULTURE—(C) THE LIVESTOCK
AND MEAT TRADE

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(C) THE LIVESTOCK AND MEAT TRADE

THE various branches of the livestock industry have been subject to different influences of demands, of supplies, of State assistance, and of organization. The beef industry, with continually increasing supplies and possibly suffering from some decline in consumers' appreciation, showed continuation of depression until 1936 and did not show any marked improvement until 1937. The mutton and lamb industry, with declining supplies after 1933, enjoyed steady and satisfactory prices until the autumn of 1937. The pig industry which was subject to special measures for its stimulation showed rapid expansion of home production but with lower total supplies between 1934 and 1936 than in the years 1931 and 1932 enjoyed relatively satisfactory prices. Prices of eggs continued at low levels, but under the stimulus of low prices for grain, and, on the whole, rising consumers' appreciation of eggs and poultry, the poultry industry continued to expand until 1936.

Total estimated supplies of the chief forms of meat, home and imported, were lower in 1934 than in previous years but still higher than in the years up to 1930, and then rose again to a fairly high level, but one lower than that associated with the low farm prices of 1932-3. In spite of import duties and quantitative regulation of some supplies, consumers have not suffered in respect of total supplies of meat available, although it is probable, having regard to earlier trends of consumption, that they would have preferred more pig-meat, especially more bacon and hams, and less beef. Except for the increasing supply of cow-beef, the general trend has been towards improvement in qualities of beef and mutton and lamb. In the case of beef, there is a marked tendency to change from frozen to chilled, and in the case of sheep products there is a continual trend towards the "lamb" type. With pork pigs producers attempt to meet consumers' requirements, but in the case of bacon there have been special circumstances arising from the change from smaller imports to increased home supplies.

ESTIMATED SUPPLIES OF MEAT PER HEAD OF POPULATION*
IN GREAT BRITAIN, 1932-6

Year	Beef and Veal	Mutton and Lamb	Pig-meat	Total
	lb	lb	lb	lb
1932	62 8	31 8	49 4	144 0
1933	64 5	33 0	48 0	145 5
1934	67 2	31 0	43 0	141 2
1935	68 8	30 6	44 0	143 4
1936	69 8	29 5	44 0	143 3

HOME SUPPLY There have been increases in the supply of beef, but production from cattle (other than cows) reared and fattened in Great Britain has shown a slight decrease. Prime cattle including those from Ireland have shown an increase, but there has also been a heavy increase in the supply of cow-beef. While total cattle stocks have been increasing the most notable feature is the increase in the dairy herd and the meat by-products of milk production have been exercising a big influence in the beef markets. The average weight of beef carcasses, apart from cows and bulls, has been declining.

NUMBER OF LIVESTOCK IN GREAT BRITAIN (APART FROM
DAIRY CATTLE) IN THOUSANDS

	1934	1935	1936
CATTLE			
2 years old and above .	1,251	1,222	1,210
1 year and under 2 years .	1,693	1,643	1,583
Under 1 year	1,537	1,446	1,490
SHEEP			
Ewes kept for breeding .	10,663	10,466	10,548
Other sheep			
1 year and above . . .	2,724	2,794	2,643
Under 1 year	10,796	10,984	11,015
PIGS			
Sows kept for breeding .	479	526	512
Other pigs for breeding .	3,048	3,547	3,528

The demand for young heifers destined for the dairy herds afforded some encouragement to the rearer, but on the whole the market for other young cattle was unsatisfactory until 1936 and the Spring of 1937. The number of ewes kept for breeding

declined slightly until 1936 and then rose in 1937. But the very remarkable trends towards the reduction of sheep over one year old, and to reduction of the age of slaughter, continued. Number of sows kept for breeding and general pig production increased as a result of control of imports and organized marketing. During the early years of the Pigs and Bacon Marketing Schemes there was a fairly rapid increase as farmers placed considerable faith in the new venture. From the low figure of 3.4 millions in 1930 there was a gradual recovery until 1935, when just over 4 millions were recorded. During the last two years, however, numbers have fallen, there has been a curtailment of breeding since 1935; and with the failure of the forward contract system for 1937 producers failed to show the confidence which they had previously placed in the marketing schemes.

The general production of the chief meats in Great Britain has expanded. There was a rise of 3 per cent in 1934-5 on the previous year, beef and veal rose by 10 per cent and pig-meat by 6 per cent, mutton and lamb however fell by 15 per cent. By 1935-6 all classes were up on the previous year, beef and veal by 4 per cent, pig-meat by 15 per cent and mutton and lamb by about 1 per cent. The comparatively rapid rise in the output of pig-meat is particularly noteworthy. In that year farmers were undoubtedly disposing of excessive numbers of pigs, including some breeding stock, consequently a curtailment of numbers was to be expected in the following years.

PRODUCTION OF MEAT IN GREAT BRITAIN
(000 cwt.)

	1933-4	1934-5	1935-6
Beef and veal	11,344	12,330	12,825
Mutton and lamb	5,633	4,760	4,770
Pig-meat	6,711	7,113	8,211
TOTAL	23,688	24,203	25,806

POULTRY

The products of poultry represented nearly 7 per cent of the agricultural output of England and Wales in 1925 but nearly

11 per cent in 1933-4, and total output had risen meanwhile. The growth of the industry was least rapid in Scotland and most rapid in England, and in England and Wales the greatest growth occurred in some of the densely populated areas like Lancashire and the West Riding. The number of fowls more than doubled in England and everywhere increase in numbers was accompanied by a large increase in yield per bird. Estimated supplies of eggs rose by 40 per cent between 1924 and 1934, and then fell slightly in 1935. The proportions home-produced were 52, 68, and 66 per cent in 1924, 1934, and 1935, while Empire imports fell from 12 to 10 and then to 8 per cent and foreign supplies fell from 36 to 22 and then rose to 26 per cent. Imports of eggs have been regulated by negotiated "standstill agreements." Estimated supplies of eggs and poultry per head show interesting comparisons during the years of depression and recovery.

ESTIMATED CONSUMPTION OF EGGS AND POULTRY

Year	Eggs (No.)	Poultry (lb.)
1929	144	4.2
1930	153	4.5
1931	158	4.8
1932	149	4.6
1933	149	4.9
1934	151	5.0
1935	150	4.8
1936	158	4.7

Retail prices of eggs, allowing for seasonal variations, were about steady in 1924-8, fell in 1930 and again in 1931, remained about steady for a year, and then fell again in 1933 to remain nearly steady for three years. The fall between 1929 and 1933 was of nearly one-third, but after 1935 there was a rise of about 16 per cent from the lower level. On the other hand, prices of poultry, mainly supported by the middle and higher classes, showed very much less decline. During the period of reduction of imports, cheap feedstuffs and technical progress enabled flockmasters to extend their industry while prices were falling, so long as consumers supported the markets. But during this period the stamina and health of stock birds appears to have been

declining and the incidence of disease to have been increasing, and flocks suffered from increasing death-rates. Consideration was given to a Marketing Scheme, but divisions of interests between producers, and absence of universal economic pressure, led to rejection of the proposals. Nevertheless, the National Mark eggs scheme made considerable progress and somewhat generally marketing showed considerable improvement. In Scotland there was some development of producers' co-operation. Although there were variations in profitability from year to year, it does not appear that there was acute depression in the industry at any stage. If technical difficulties, largely connected with mortality amongst stock, can be overcome the future of the industry still appears promising.

PRICES

CATTLE. Prices of fat cattle were lower in 1934 than in the previous year, this brought State assistance, and prices were augmented by means of subsidy payments from September, 1934.¹ When allowance is made for this, there was an improvement of 14 per cent for the last four months of the year compared with the corresponding period in 1933. It is significant, however, that, compared with the 1927-9 level, fat cattle prices in 1934 were down by 28 per cent. Excluding the State contribution prices were lower by 8 per cent in 1935 than in 1934, but when allowance is made for the subsidy there was an improvement of 2 per cent. The next year, 1936, was the first to show a rise since 1928. A gain of 5 per cent was shown on the previous year, and with the addition of the subsidy, returns were better than they had been during any of the previous five years. There was also a very welcome rise of 8 per cent in store cattle prices. Prices of fat and store cattle continued to rise throughout 1937.

SHEEP. The heavy depression in the wool trade continued until 1936, with some improvement in 1937. Although fat sheep prices have fluctuated considerably in recent years, they have shown a more rapid recovery than those of other livestock. The lowest point was touched in 1932, but there was a rise of 13 per cent in the following year and a further gain of 17 per cent

¹ See previous review, *Britain in Depression*

in 1934. During the first years of the industrial recovery in Great Britain there was an increase in the demand for mutton and lamb, whilst there was a slight fall in the consumption of beef, and this may explain to some extent the difference in the two markets. In 1936, although the spending power of the population was increasing, fat sheep prices showed only a small gain. Store sheep prices never suffered the same depression as cattle and there was a rise of 9 per cent in 1935 and a further rise of 4 per cent in 1936. Weakness was shown in the markets of the autumn of 1937.

PIGS Prices of both pork and bacon pigs since 1934 have been influenced to a considerable extent by the operations of the Pigs and Bacon Marketing Schemes.¹ Prices of bacon pigs sold under contract were pre-determined, but as curers were allowed to purchase part of their requirements in the open market, prices of other pigs were influenced and were sometimes higher than those paid under contracts. Both pork and bacon pig prices touched their lowest points in 1932, but during the subsequent two years there was an appreciable rise. A gain of 22 per cent was shown in the case of pork pig prices and one of 21 per cent in those of bacon pig prices. There was a rather serious decline in 1935 but an appreciable recovery was shown in 1936. Prices of pork and bacon pigs continued to rise during 1937. In spite of fears to the contrary, due to the rise in feed prices, the pig industry continued to be profitable.

IMPORTS

From 1931 the total amount of meat entering into international trade showed a downward trend. Two factors played important parts in this change, viz. the economic depression and the numerous restrictive measures adopted by various countries. Great Britain receives a larger proportion of the beef and veal exports than any other country and in recent years this proportion has been increasing despite the decline in the total volume imported. Before the wholesale application of tariffs and import restrictions by various European countries there was considerable continental importation of frozen beef but later this dwindled to

¹ See below, pp. 214-218.

minor proportions. The total beef and veal imported into Italy, France, Belgium, and Germany in 1935 had fallen to one-third that of 1930 and to one-sixth of the 1926 figure. In 1936 Germany relaxed her import restrictions to some extent and admitted slightly heavier supplies. The curtailment of the continental markets, however, created a serious problem in this country and remedial measures had to be applied. Frozen carcasses and boned beef from foreign countries were, under the Ottawa Agreements, gradually reduced from 1933 onwards. Plans were made under these Agreements to regulate foreign supplies arriving in this country during the five years following the adoption of the Agreements, unless in the meantime a permanent plan for the organization of supplies to the British market had been adopted. During the three years 1934 to 1937, imports of frozen beef were to be stabilized at 35 per cent below the supplies arriving during the Ottawa Year unless other agreements were made between the Governments concerned. Statutory control of this kind has been exercised during the last three years over imports of frozen carcasses and boned beef whilst voluntary arrangements have been made for the regulation of frozen boneless beef and offals. A minimum annual quota was guaranteed for imports of frozen beef and frozen beef offals from Argentina. And until 1939 it is agreed that frozen beef is to comprise 60.6 per cent and frozen beef offals 72.4 per cent of the total regulated imports of these classes of meat into the United Kingdom.

Most of the Empire countries agreed in 1933 to undertake the regulation of frozen beef shipments to this country so that the quantity sent would not be increased by more than 10 per cent over the quantity sent in the "Ottawa Year." And this country promised not to impose restrictions on supplies from Australia and New Zealand until June, 1934. No restrictions, however, have been subsequently imposed but periodic arrangements have been made with the Governments of several European countries for the regulation of supplies. In the case of chilled beef the Ottawa Agreements provided that until June, 1934, imports from foreign countries should not exceed those of the Ottawa year. But in consequence of a serious fall in beef prices in this country it was considered necessary to take measures to curtail

shipments and a "Gentlemen's Agreement" was made with the South American exporting countries. This arrangement was continued and the percentage reductions made are given below.

CHILLED BEEF FROM SOUTH AMERICA

	Reduction on Ottawa Year
	Per cent
January-December, 1933	9.25 ¹
January-December, 1934	9.43
January-December, 1935	9.49
January-December, 1936	9.37

Under the Argentine Agreement of 1933 the British Government undertook not to restrict imports of chilled beef from Argentina below those of the Ottawa year, unless such reductions were necessary in order to maintain beef prices in this country. Provision was also made in the Agreement for increased shipments from Argentina in the event of increased imports from the Dominions. During part of 1935 shipments from the Dominions were rather heavy and the Argentine Government, together with other South American countries, exercised the right to increase their shipments to the United Kingdom. These additions to supplies were made in 1936 and in the early part of 1937; chilled beef arrivals during 1936 therefore were heavier than in any year since 1932. Empire supplies also showed a marked advance. After the expiry of the original Argentine Agreement a new one was negotiated which will operate until 1939. This provides that the minimum permissible quantity of chilled beef to be admitted to the United Kingdom during 1937 would be equal to that sent in 1935 less 138,700 cwt. Imports in 1938 and 1939 will also be based on the 1935 figure less 138,700 cwt. in each of these two years, provided that in 1939 the total admitted shall not fall below 6,590,000 cwt. The Agreement also guarantees that Argentine imports shall be equal to at least 86.6 per cent of the total regulated imports of chilled beef into the United Kingdom from foreign countries during these years. Imports of canned beef are controlled by voluntary agreements between exporting

¹ Fixed for quarters, annual averages only given here

countries and Great Britain. The level of actual imports is usually within the permitted quantities

As regards the future, perhaps the most important change arises from technical developments which enable the Australian and New Zealand exporters to ship chilled beef across the Tropics. Increasing supplies of chilled beef from these countries have caused some perturbation in the trade from time to time, and there seems little doubt that the change will cause improvement in the general level of quality of imported supplies.

The recently formed Empire Beef Council now deals with problems of beef imports to this country from the Dominions. It is composed of representatives of beef producers in the United Kingdom and of other countries concerned. Similar problems concerning both the Empire and foreign countries come under the consideration of the International Beef Conference. The quantities of chilled and frozen beef to be imported in the first half of 1938, agreed by the International Beef Conference, show increases over the quantities permitted in the corresponding period of 1937.

The importation of frozen mutton and lamb from foreign countries has been controlled under the Ottawa and Argentine Trade Agreements. Since April, 1934, imports have been limited to 60 per cent of the quantities imported in the Ottawa Year. On the whole, permitted and actual imports have shown reasonably close agreement. Voluntary limitation of imports of frozen mutton and lamb from Empire countries has been in operation for some years and the agreed maxima for the years 1935, 1936, and 1937 were New Zealand 3,900,000 cwt. and Australia 1,750,000 cwt. The actual quantities exported to this country were within the limits set for 1936 and 1937. Provision has been made for increases of 110,000 cwt. from New Zealand and 50,000 cwt. from Australia in 1938.

Since 1933 imports of bacon and hams have been regulated under the Agricultural Marketing Act of 1933. It was intended to make the total supplies of bacon and hams about 10,670,000 cwt. and after estimating home and Empire supplies quotas were allotted to the foreign countries. Owing to variations in trade requirements, and variations of political or economic pressure of

potential exporting countries, individual quotas have changed from time to time, but in spite of difficulty in accurate assessment of future production in Great Britain, there has been little change in the total quantities allotted to foreign countries.

Allocations of certain amounts of import trade in bacon and hams have been made to Empire countries on the basis of probable shipments, and there is provision in the Trade Agreement with Canada for control of Canadian imports when they exceed $2\frac{1}{2}$ million cwt

Imports of frozen and chilled pork from foreign countries are compulsorily controlled under the Agricultural Marketing Act, 1933, and imports from Empire sources are controlled by voluntary agreement. Actual imports are usually within the prescribed limits, but there has been a considerable development of this trade. Imports of pork from New Zealand have been cured and added to the bacon supply of Great Britain.

Home producers have always suspected that there were ways and means of getting round the quota restrictions, whether voluntary or compulsory, and have been particularly suspicious as regards beef, especially the boneless variety or the so-called "bagged meat." But on the whole the regulations appear to have been remarkably well observed.

The organization of handling and control of sale of imported supplies have been strengthened and improved, and in the cases of beef, mutton and lamb the competitive strength of imports has increased.

MARKETING OF PIGS AND BACON

The Pigs and Bacon Marketing Schemes are essential parts of a plan which was designed to secure a gradual expansion of the home industry. This country was dependent on imports for about four-fifths of her supplies of bacon. Under a well-organized plan home production could undoubtedly be increased quite appreciably. Countries from which we draw the bulk of our supplies do not in general enjoy any natural advantage in bacon production, and Great Britain is as well suited for the development of this industry as any of the exporting countries. It was realized, however, that considerable reorganization of the home

industry was needed before any progress could be made and marketing schemes designed to attain this end came into operation in 1933

In the early contracts curers agreed to pay for pigs in accordance with variations in the price of certain classes of feedingstuffs. It was found however that this method was unsatisfactory as the price which curers could pay for pigs was largely dependent on the price of bacon. From May, 1934, another form of contract was tried which aimed at fixing pig prices according to the prices of both feedingstuffs and those of bacon and offals. Under the earlier plan curers had suffered losses owing to feed and bacon prices moving in opposite directions, and the situation became so serious that the Government has to provide assistance in the form of a loan¹. The terms of the loan provided for repayment during 1934 and the necessary funds were to be obtained from levies on pigs sold during that year. The actual refund was made by curers who could recoup themselves from pig producers.

Apart from minor variations the 1935 contract retained the main features of the previous one. The general plan, however, did not make the appeal to producers that was anticipated. Considerable difficulty was experienced in obtaining the number of pigs required and towards the close of 1934 special efforts had to be made to encourage producers to enter into contracts. Even after repeated attempts had been made curers were without a sufficient supply to assure them of an economic throughput, consequently arrangements were made to enable curers to supplement their requirements by purchasing pigs in the open market.

Contracts for 1936 showed no important departure from those in operation during the two previous years, except that they introduced a bonus scheme designed to encourage producers to deliver pigs during the winter months. Special efforts had again to be made to encourage producers to make contracts. The terms of the agreements were slightly modified to the advantage of producers, but although this served to increase the number contracted it was still insufficient to meet curers' requirements. Accordingly the Pigs Marketing Boards were obliged as in previous years to allow producers to purchase pigs in the open

¹ The loan amounted to £160,000 at 3½ per cent per annum

market. Although the number of pigs contracted during 1936 showed an increase of 10 per cent on the previous year, some curers failed to obtain a sufficient supply to satisfy their requirements owing to the fact that curing capacity had expanded and to the preference shown by many producers to supply certain factories. But for Great Britain as a whole a higher proportion of the available supply of pigs in the country was secured on the 1936 contracts than in any previous contract period. In view of this, the supply of pigs available for other trades was below normal, and when curers sought to augment their supplies by purchasing on the open market it served to intensify the demand, and in consequence prices during the greater part of the year were above those obtainable under the contract. This state of affairs was very undesirable, those who had not contracted obtained more favourable prices, which was extremely damaging to the schemes. It was not always realized that the comparatively good prices ruling in the open markets were due mainly to the operation of the schemes.

BACON PIG CONTRACTS, GREAT BRITAIN

Year	No. on Contracts	No. Delivered
March–December, 1934 .	1,324,538	1,231,963
January–December, 1935 .	1,854,105	1,781,333
January–December, 1936 .	2,040,076	1,802,324

A Joint Committee of the Pigs and Bacon Boards was set up in 1936 to consider what steps should be taken to remove the difficulties experienced. The Committee suggested that for 1937 pig producers should be guaranteed minimum monthly prices on condition that a minimum of 2,200,000 pigs were delivered, and that curers should not buy in the open market except to meet deficiencies in the contracts. No suggestion however was made as to the modification of the price-determining plan. Neither producers nor curers expressed great satisfaction with the proposals of the Committee. It was feared that insufficient encouragement was given to producers, in view of the decline in the pig population of the country, as shown by the Census of June, 1936, and the rising cost of feed. The Pigs Marketing Board eventually

decided that they could not accept the proposals and, after further fruitless negotiations, it was agreed to refer the matter to an independent person, namely, Sir Robert Greig. His award contained, *inter alia*, provisions for slightly higher prices to producers. Contracts for 1937 were made on the basis of the award. A new grading system based on the Danish plan was introduced and a clause was inserted providing that if the number of pigs on contract was below 2,200,000 the Bacon Marketing Board had the right to declare the contracts void. As the actual number on contracts for 1937 was only 1,895,602 the Board exercised its right and declared them void.

During 1937 prices in the open market were comparatively high and on the whole there was a short supply. The pork trade was active and this drove up the prices which curers have had to pay. Prices of feedingstuffs also showed a considerable advance and costs of pig production were higher. No provision was made in the 1937 contracts for a rise in the price of feed above 9s. per cwt. This figure was reached in February and exceeded in subsequent months.

Although the Pigs and Bacon Schemes have not achieved the success anticipated, they have been responsible for certain favourable developments in the industry. Compared with pre-scheme days the pig population of Great Britain advanced by 25 per cent and the output of home-produced bacon doubled between 1930 and 1936, while prices were steadier than in the years before any form of organization was attempted.

The Bacon Development Scheme came into operation in September, 1935. The Board is composed of representatives of the Pigs and Bacon Marketing Boards and certain other members in accordance with the provisions of the Agricultural Marketing Act, 1933. Its general duty is to organize the production of bacon in Great Britain, which includes the licensing of bacon factories with a view to preventing, eliminating, or reducing inefficient production. The Board is also engaged in promoting education and research in connection with the production and marketing of pigs and bacon.

Various solutions of the difficulties of the Pigs and Bacon Schemes have been suggested, but none had been accepted by

the end of 1937. Activities under the Bacon Scheme continue but while the Pigs Scheme is still legally in operation or practice it is nearly inoperative. In the meantime, the control of imports limiting supply and the upward movement of consumers' appreciation of pig-meat, including pork, bacon, and hams, strengthening demand, are maintaining prices. While supplies of pig-meat have diminished the proportion of home produce is estimated to have risen from 33 per cent in 1931 (37-39 per cent in 1926-9) to over 50 per cent in 1936. (Imp Econ. Comm. "Meat," 1937.)

ARRANGEMENTS WITH EIRE

In view of the existence of certain difficulties between the United Kingdom and Eire, trade between the two countries has been closely regulated since 1933. imports of certain goods were prohibited whilst others were only admitted to this country under licence. During the last three years however, special arrangements have been made and "Coal-Cattle Agreements" have been negotiated annually. As a result there has been an appreciable rise in the number of cattle exported and, in exchange, an appreciable increase in the coal trade between the two countries. The import duty on coal entering Eire was removed in 1936 and reductions were made in duties on some other goods whilst the United Kingdom Government reduced by 10 per cent *ad valorem*, with a few exceptions, the duties on live animals and meat.

IMPORTS OF CATTLE FROM EIRE TO UNITED KINGDOM
(Thousands)

Year	Fat Cattle	Store Cattle	Other Cattle	Total Cattle
1934	164	389	97	650
1935	216	528	104	848
1936	209	573	96	878
1937	176	589	85	850

Apart from a few modifications of detail the same kind of arrangements were continued in 1937. In spite of protests of cattle breeders, especially in Wales, the full subsidy of 5s. per cwt. was paid on cattle imported from Eire and fattened in Great Britain from 1934 to 1937, and the pressure of Irish cattle

on the markets was keenly felt by producers of store cattle during 1935 and 1936

THE LIVESTOCK INDUSTRY ACT, 1937

The provision of a subsidy on fat cattle (heifers, steers and cow-heifers, but excluding cows and bulls) from 1934 onwards, together with regulation of imports, did not satisfy producers. Heavy supplies continued to appear on the markets and in spite of low prices consumers did not appear to be attracted sufficiently to stiffen demands, hence producers' prices remained at a low level. There was agitation for a levy-subsidy system, but when this was refused the temporary subsidy was replaced by provision for somewhat more permanent assistance. As the consideration of livestock marketing schemes in 1934 and 1935 had proved abortive, the opportunity of providing a more or less permanent subsidy was taken to provide also organization for improvement of marketing methods. Under the Livestock Industry Act of 1937, the organization consists of an independent Livestock Commission assisted by a Livestock Advisory Committee representative of all interests concerned, with three Advisory Sub-committees for England, Scotland and Wales.

The administrative provisions respecting the subsidy have been drastically revised since September, 1937.

Two standards have been established (*(a)* ordinary standard and *(b)* quality standard), to one of which fat cattle must conform in order to qualify for the subsidy. The Orders¹ also prescribe rates of payment on carcasses which are equivalent to those prescribed for live animals. Rates of subsidy payments now in operation are given below—

	Animals per cwt Live Weight	Carcasses per lb. Dead Weight
	<i>s</i> <i>d</i>	
ORDINARY STANDARD		
Home Bred . . .	5 0	1d
Imported . . .	2 6 ²	$\frac{1}{2}$ d
QUALITY STANDARD		
Home Bred . . .	7 6	1 $\frac{1}{2}$ d
Imported . . .	5 0 ¹	1d

¹ See Statutory Rules and Orders Nos. 658, 659, 660, and 661, 1937

² Cattle from Northern Ireland count as home bred

These rates are designed with a view to giving further encouragement to the production of high quality fat cattle. Cattle which kill out at 54 per cent of their live weight qualify for the ordinary subsidy, but a killing-out percentage of 57 must be shown before they qualify for the quality subsidy. Home-bred cattle qualify for higher payments, in accordance with the Government's policy of encouraging home breeders to improve their beef herds. An aggregate sum not exceeding £5 million is to be voted annually by Parliament for the purpose of providing funds for the purposes of the subsidy and the Livestock Commission. From 1st September, 1934, to 31st August, 1937, £11,409,951 was paid in subsidy at the rate of £2 7s 4d. on 4,819,528 animals. The amount is about £3,804,000 a year, so larger provisions have now been made, but the actual rates of subsidy are subject to the recommendation of the Livestock Commission, and the sum provided may not be fully used.

Until the passing of this Act control of meat and livestock imports was largely made by means of trade agreements. Under the Marketing Act, 1933, power to restrict the importation of an agricultural commodity into the United Kingdom could be exercised only when there was a marketing scheme under these Acts either in operation or in contemplation for the particular product concerned. The Livestock Act empowers the Board of Trade to regulate by Order the importation into the United Kingdom of livestock and meat (except bacon¹) if it appears that it is desirable in the general interest in order to secure the stability of the market for those products in this country. The Board of Trade will be advised by the Empire Beef Council and the International Beef Conference. The Act also contains provisions for securing improvement in the system of livestock markets in Great Britain, and for the establishment of three experimental abattoirs.

SUMMARY

Supplies of meat during the period of recovery have been slightly less than in the period of depression, but in spite of regulations of imported supplies in many forms the consumers

¹ Bacon is controlled under the Agricultural Marketing Act, 1933

have not suffered any marked deprivation. It is possible that some changes in dietary habits and demands arising partly from changes in the industrial occupations of the people and lightening of the tasks of labour and partly from rising appreciations of other goods have tended to make a slight reduction in the demand for meats. In any case, rising purchasing power together with a slight shortage of the chief meats have not combined to make as much difference in retail prices as might have been expected. On the whole the trend of demand has been in favour of the "lighter" meats—veal, lamb, small pork, and poultry. During the depression the higher quality of beef lost some of its price advantage and the demand for the second quality was relatively strong, but with improved economic conditions the higher quality has regained its position. There are two trends in the beef supply—an increase in beef which is a by-product of the breeding and dairy industry, and tendency to improvement of the other supply, first by reduction in carcass weight and rising quality in home produce and then by substitution of chilled for frozen amongst imports. Scottish beef has achieved a high position in respect of quality. The improvement in quality of mutton and lamb, especially lamb, continues, and New Zealand made a strenuous publicity effort to draw the attention of consumers to its supplies. Pig producers generally have made strenuous efforts to improve production and to meet the more advantageous requirements of both the pork and bacon markets. In the bacon market consumers, especially in the larger towns, felt a deprivation by the reduction in the Danish supply, and while the products of the British bacon factories have improved—or the quantities of high-class products have increased—no complete substitute for the Danish supplies has been provided. It is said that regulation of bacon supplies has led to a larger supply of poor quality from home and overseas sources and a larger supply of high quality home produce with a reduction in the total supplies of higher qualities. Supplies of poultry have increased and as prices have been strongly maintained, a strong demand is indicated. Since general recovery set in consumption of eggs increased sharply in 1936 but without any marked effect on retail prices.

Producers have believed that distributors' margins have been

wider than they normally expected, but there is reason to believe that although they have been adequate, if not slightly generous, they have not been so wide since 1934 as in the years of 1932 and 1933. But prices of hides and skins were extremely low, and although the medicinal uses and the popularization of some other oils raised realizations from these, both producers and butchers suffered to some extent from the very low prices of hides and skins.

In the case of pigs, the trade was organized under an agricultural marketing scheme, but although the machinery worked fairly well for three years it never achieved the success of the Potato or the Milk Marketing Schemes. Yet organization in this branch served the purposes of bacon curers and their industry has been expanded and strengthened. Organization under the Agricultural Marketing Acts for the poultry industry was discussed but economic conditions did not compel flockowners to accept drastic organization and the project was dropped. Voluntary movement towards organization of the livestock markets failed, but under the stimulus and with the assistance of the Ministry of Agriculture sale by dead-weight and grade has shown considerable development. The National Mark scheme for sale of carcasses has continued in operation. The initiative as regards improvement of livestock markets now lies with the Livestock Commission and with owners or operators of markets, but producers also may become active if the other parties use their powers. There are indications of keen examination of the methods and conditions of livestock marketing in the near future.

The livestock industry as a whole has shown substantial recovery. Under the special stimulus of a Marketing Scheme and import regulation the pig industry showed recovery in 1934, has increased, and remained profitable. Its main supports are now import regulation and favoured treatment by consumers. In spite of heavy depression in the wool markets, the sheep industry showed recovery in 1934 and was one of the mainstays of pastoral production when the cattle trade was at its weakest. Markets for mutton and lamb were supported by improvement in middle-class incomes in 1935 and 1936, but are now showing weakness partly because of increasing supplies but also, probably, because of pressure of rising cost of living on middle-class incomes.

The recovery in the wool markets in 1936-7 was short-lived. Cattle showed the latest recovery and the future of the beef markets is still uncertain. The continuance of low prices when prices of pork were relatively high strongly indicates a fall of beef from consumers' favour. Reduction in supplies will support prices, but it appears doubtful whether prices will go back to their pre-depression parity with other meats. This may not bring permanent reduction in supplies for it appears that technical changes in the industry may lead to a lower cost basis of production, and the by-product contribution from dairy herds will continue at a high level. Since the autumn of 1936, and particularly recently, all livestock producers have been concerned with the rises in prices of feedstuffs, first grain and then the products of oil seeds, on which production in Great Britain so largely depends.

APPENDIX I

IMPORT DUTIES ON MEAT—FOREIGN

Beef and veal not preserved in any airtight container (excluding offals and boned and bone-less meat)—	
Chilled	1d per lb
Other kinds	2d per lb
Boned and boneless beef and veal and edible offals of beef and veal not being beef, veal or offals preserved in any airtight container, and excluding sweetbreads and tongues	
	20 per cent <i>ad valorem</i>
Beef and veal preserved in any airtight container (including edible offals of beef and veal, but excluding sweetbreads, tongues and jellied veal)	
	10 per cent <i>ad valorem</i>
Extracts and essences wholly or in part derived from beef or veal	
	10 per cent <i>ad valorem</i>

APPENDIX II

DUTIES ON GOODS FROM EIRE¹

Description		Rate of Duty
LIVE CATTLE		
Under 6 months old		1 per head
6 months old but under 15 months old		2 per head
15 months old but under 2 years old		3 per head
2 years old and upwards not being cattle known as minceis		4 5s per head
2 years old and upwards being cattle known as minceis		2 per head

¹ Removed May, 1938.

LIVE SHEEP AND LAMB	5s per head
LIVE PIGS	40 per cent
OTHER LIVE ANIMALS (except Horses.)	30 per cent
MEAT	
Mutton and Lamb	
Carcasses	5s per carcass
Sides	2s 6d per side
Other kinds	20 per cent
Pigs' Meat—Carcasses	16s per cwt or
	40 per cent whichever
	is the greater
Other kinds	40 per cent
Beef and veal	30 per cent
Edible offals	30 per cent
Other Meat	20 per cent
POULTRY	
Dead	
Fowls, ducks, and geese	1d per lb
Turkeys	2d per lb
Other kinds	30 per cent
Live	30 per cent

APPENDIX III

INDEX NUMBER OF PRICES

(1911-13 = 100)

Year	FAT CATTLE		FAT SHEEP		FAT PIGS			
					Pork		Bacon	
	Per cwt ¹	Index	Per 20 lb ²	Index	Per 20 lb ³	Index	Per 20 lb ⁴	Index
	<i>s</i> <i>d</i>		<i>d</i>		<i>s</i> <i>d</i>		<i>s</i> <i>d</i>	
1932	40 6	115	7	97	10 4	98	9 1	91
1933	35 10	101	8½	110	11 6	109	10 2	102
1934	35 1	99	9½	127	12 8	120	11 3	112
1935	32 5	91	9½	127	11 6	109	10 4	103
1936	34 2	96	9½	130	13 3	115	11 4	113

¹ Average Prices Second Quality (Live Weight) Shorthorn, Hereford, and Devon cattle

² Average Prices Second Quality (Dead Weight) Down and Longwool sheep

³ Average Prices (Dead Weight).

⁴ Average Prices (Dead Weight)

APPENDIX IV

QUANTITIES IMPORTED

QUANTITATIVE REGULATION OF IMPORTS OF MEAT (SUMMARY)

Since 1933 oversea supplies of meat to this country have been regulated in various ways

Foreign Supplies of Frozen Beef From January, 1933, to June, 1934, these were reduced under the terms of the Ottawa Agreements. Subsequently voluntary arrangements have been made.

Empire Supplies of Frozen Beef These have not been subjected to restrictions, but the Governments of Australia and New Zealand (the main Empire suppliers) have agreed to voluntary regulation.

Foreign Chilled Beef From January, 1933, to June, 1934, supplies were regulated under the Ottawa Agreements. Subsequently Trade Agreements have been made with the supplying countries.

Empire Chilled Beef No restrictions have been imposed but agreements for regulation have been negotiated periodically.

Mutton and Lamb Foreign Supplies were regulated under the Ottawa Agreements.

Empire In the case of Empire supplies there is no Statutory regulation but annual Agreements between the countries concerned have been made.

Pig-Meat Bacon and Hams Voluntary restriction was in operation from November, 1932, but from December, 1933, control has been effected by (Import Regulation) Orders.

Pork In 1926 a veterinary embargo was placed on the importation of pork from the Continent. Since March, 1935, regulation has been effected by Order of the Board of Trade.

Foreign Pork is only admitted under licence. Empire supplies from 1935 have been subject to Agreements with the countries concerned.

Live Cattle Fat and store cattle from Eire have been regulated under the Coal-Cattle Agreements. From Canada supplies have been arranged under the Anglo-Canadian Agreement.

DETAILED STATEMENT OF LIVESTOCK AND MEAT IMPORTS IN 1934, 1935, AND 1936

		1934	1935	1936
CATTLE—For food				
Eire	Number	458,104	592,644	657,301
Canada	"	51,373	6,478	37,759
	TOTAL	509,537	599,122	695,060
COWS AND HEIFERS—				
For breeding	Number	49,788	62,292	61,094
SHEEP AND LAMBS—For food				
(Total) Eire	"	362,989	278,969	455,583
SWINE—For food				
(Total) Eire	"	133,913	127,989	120,721
ALL OTHER ANIMALS	"	567,551	707,342	929,070

APPENDIX IV (continued)

DETAILED STATEMENT OF LIVESTOCK AND MEAT IMPORTS
IN 1934, 1935, AND 1936

		1934	1935	1936
BEEF—				
Fresh and salted	cwt	4,667	2,292	5,382
Chilled—				
Empire	„	238,445	478,336	617,303
Foreign	„	8,012,213	8,007,213	8,162,688
	TOTAL	8,250,658	8,485,549	8,779,991
Frozen—Quarters and sides				
Empire	Cwt	2,024,867	1,573,778	1,337,935
Foreign	„	143,657	147,149	153,007
	TOTAL	2,168,524	1,720,927	1,490,942
Frozen—Boned, including cheeks and skulls				
Empire	Cwt	477,589	543,317	611,796
Foreign	„	62,651	50,693	53,170
	TOTAL	540,240	594,010	664,966
Frozen—Other descriptions including tongues, hearts, livers, kid- neys, etc				
Empire	Cwt	107,715	121,228	133,438
Foreign	„	593,061	541,925	599,273
	TOTAL	700,776	663,153	732,711
Tinned, canned, etc				
Empire	Cwt	2,366	2,584	3,453
Foreign	„	88,610	87,092	91,601
	TOTAL	90,976	89,676	95,054
Other				
Empire	Cwt	27,316	50,525	68,473
Foreign	„	828,753	838,807	853,099
	TOTAL	856,069	889,332	921,572
Extracts and Essences				
Empire	Cwt.	8,927	7,842	12,272
Foreign	„	57,688	53,913	75,259
	TOTAL	66,615	61,755	87,531
TOTAL OF BEEF		12,678,507	12,506,697	12,778,149
VEAL—Frozen				
Empire	Cwt	122,456	163,056	172,287
Foreign	„	11,255	16,849	19,338
	TOTAL	133,711	179,905	191,625

APPENDIX IV (continued)

DETAILED STATEMENT OF LIVESTOCK AND MEAT IMPORTS
IN 1934, 1935, AND 1936

		1934	1935	1936
MUTTON AND LAMB—				
Fresh	Cwt.	12,882	53,347	21,324
Frozen mutton				
Empire	Cwt	1,360,224	1,465,613	1,116,432
Foreign	„	236,591	248,851	227,969
	TOTAL	1,596,815	1,714,404	1,344,401
Frozen lamb				
Empire	Cwt	3,821,701	3,951,575	3,914,484
Foreign	„	1,060,278	1,032,118	1,044,509
	TOTAL	4,881,979	4,983,693	4,958,993
Tinned, canned, etc (including tongues)	Cwt	47,010	63,899	68,046
Other descriptions (tongues, hearts, livers, kidneys, etc)	„	153,466	172,746	192,716
TOTAL OF MUTTON AND LAMB		6,692,158	6,988,149	6,585,480
PIG PRODUCTS—				
Bacon				
Empire	Cwt	1,263,051	1,378,132	1,597,984
Foreign	„	6,335,211	5,548,773	4,971,649
	TOTAL	7,598,262	6,926,905	6,569,633
Hams				
Empire	Cwt	193,801	210,905	300,490
Foreign	„	534,472	465,862	371,274
	TOTAL	728,273	676,767	671,764
Pork, fresh				
(Total) Empire	Cwt	143,771	142,841	115,973
Chilled or frozen				
Empire	„	523,900	644,598	816,777
Foreign	„	581,520	270,500	208,435
	TOTAL	1,105,420	915,098	1,025,212
Tinned, canned, etc				
Bacon and hams	Cwt	98,304	80,177	79,846
Tongues				
Empire	„	942	941	1,173
Foreign	„	105,960	79,684	76,718
	TOTAL	106,902	80,025	77,891
Other descriptions (heads, feet, livers, kidneys, etc)	Cwt	186,834	166,907	182,779

SUMMARY OF IMPORTS

BEEF

Year	Fresh	Chilled	Frozen	Salted, Tinned, etc	Total
	Tons	Tons	Tons	Tons	Tons
1932	200	440,000	128,300	40,200	608,700
1933	1600	408,600	145,700	46,300	602,200
1934	200	412,500	108,400	112,800	633,900
1935	100	424,300	86,000	114,900	625,300
1936	300	439,000	74,500	125,100	638,900

MUTTON AND LAMB

Year	Fresh Mutton and Lamb	Frozen Mutton	Frozen Lamb	Tinned, Canned, etc	Total
	Tons	Tons	Tons	Tons	Tons
1932	400	103,300	243,100	9,000	355,800
1933	2200	87,000	245,600	9,200	344,000
1934	600	74,800	244,100	15,100	334,600
1935	2700	85,700	249,200	11,800	349,400
1936	1000	67,200	247,900	13,100	329,200

PIG-MEAT

Year	Bacon	Hams	Pork, Fresh	Pork, Frozen and Chilled	Pork, Other Descrip- tions	Total
	Tons	Tons	Tons	Tons	Tons	Tons
1932	569,500	40,100	13,100	19,100	16,300	658,100
1933	450,200	43,500	9,700	35,100	18,400	556,900
1934	379,900	36,400	7,100	57,400	19,600	500,400
1935	346,300	33,800	7,100	47,100	16,300	450,600
1936	328,400	33,500	5,700	52,200	17,000	436,800

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THE COAL-MINING INDUSTRY

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THE COAL-MINING INDUSTRY¹

INTRODUCTION

THE history of the coal-mining industry of Great Britain since 1932 is largely the history of administrative changes in the scheme established under the Act of 1930, followed, in the present year, by a substantial amendment in the Act itself. These changes can be appreciated only if the economic position of the industry and the character of the Act of 1930 are borne in mind. In 1913 the total output of the industry was approximately 287,000,000 tons, of which approximately 200,000,000 tons were consumed at home, the remainder being exported. By 1929 the output of the industry had been reduced to approximately 258,000,000 tons, this reduction representing the long-term decline in the industry. In the meantime the producing capacity of the industry was estimated to have increased by more than 10 per cent, so that the total capacity exceeded the production required in the most prosperous post-war year by at least 20 per cent. The industry shared in the world depression that followed, and in 1933 the total output was only 207,000,000 tons. It did not, however, fully share in the subsequent recovery, and in 1937 the output had increased only to 241,000,000 tons. It is therefore reasonable to assume that the long-term decline, as distinguished from the recent cyclical depression, has not yet come to an end. This decline is the main feature of the industry and the cause of the legislation of 1926, 1930 and 1937. It also provides the explanation of the persistent and intense depression of certain areas in the coal-mining districts, some of which have been scheduled as "special areas."

The absolute decline of the industry is not primarily due to the growth in the use of substitutes, such as oil, gas and electricity, nor is it primarily due to the growing economy in the use of coal made possible by the steady increase in boiler efficiency

¹ The subject of this section is examined at greater length in a volume entitled *The Coal-mining Industry: An International Study in Planning*, now in the press.

and other technological improvements. These factors have undoubtedly prevented growth that would otherwise have taken place. But the production of coal in Europe as a whole has increased, while the consumption of coal in Great Britain last year was approximately the same as in the years immediately preceding the war. The fall in output since 1913 is due almost entirely to the decline in the export trade.

The decline in employment has naturally been greater than the decline in output. Physical concentration has reduced the number of workers required to produce a given supply of coal. Moreover, the pressure of competition in recent years has accelerated the process of mechanization. Thus, for example, between 1928 and 1936 the proportion of the total output cut by coal-cutting machines increased from 26 per cent to 55 per cent, the proportion conveyed by mechanical conveyers increased from 12 per cent to 48 per cent. On the other hand, the proportion of the output that was cleaned before being placed upon the market increased from 25 per cent to 43 per cent, which meant an increase in the employment of workers on screening and cleaning plants.

The decline in the export trade affected different parts of the country in different degrees. Thus the South Wales industry, which exported more than half of the total output, suffered to a far greater extent than the industry in other districts, such as West and South Yorkshire, which exported only a small proportion of the total output. It is therefore a mistake to assume that the interests of all parts of the industry are identical. Again, the fluctuations that are apt to occur in the demand for industrial coal differ from those that occur in the demand for household coal, which is subject to wide seasonal fluctuations but escapes the extremes of boom and depression experienced by the producers of industrial coal. Finally, coal is not a simple, standardized commodity that commands a clearly defined and easily understood price. It varies in quality from place to place. The quality that is needed varies from use to use. On the other hand some classes of coal are partial substitutes, so that their prices move in sympathy. Coal produced from the mine is a mixture of all sizes, which have to be screened and cleaned and sold as separate

commodities. At a time when one size may be in great demand another may be a drug on the market. In the economic sense coal is merely a general term used to denote a great variety of products that are jointly supplied. Again, the total demand for coal is highly inelastic: considerable variations in price produce but small variations in demand. But, since some classes of coal are partial substitutes, the demand for one class may be highly elastic. For these reasons alone the economic issues that are raised by coal mining are at least as complex as those raised by any other industry in the country.

In 1925 a Royal Commission (known as the Samuel Commission) was appointed to make a survey of the industry, and its recommendations may be regarded as the starting point of subsequent legislation. The Commission was probably the first body to recognize that the industry was faced with a long-term decline and the problem created by such a trend. It stressed the need for amalgamation, in suitable cases, and in the following year the Mining Industry Act was passed, which made provision for reorganization. Among other things it provided that schemes for amalgamation should be submitted to the Railway and Canal Commission for sanction, and this body was required to assure itself, before sanctioning any application, that the proposed amalgamation would satisfy certain conditions. It appeared to be assumed that many applications would be forthcoming and that, in practice, the action of the Commission would be not to stimulate the process of amalgamation but to secure that amalgamations would not be sanctioned unless they satisfied the prescribed conditions. This provision of the Act produced little change in the situation.

In 1928 three voluntary district schemes of co-operation were established, one in South Wales, another in Scotland and the third in the Midland area. Briefly the South Wales scheme sought to regulate prices, the desirable reduction in output being presumably secured by failure to obtain a market at the established minimum prices. In Scotland a levy was imposed on output and compensation offered to those who closed down their mines. In the Midland area a more elaborate scheme was established, under which output was controlled and a subsidy paid

upon exports, the money being obtained from a fund provided mainly by means of a levy on output. The association controlling the Midland scheme also negotiated with the coal owners of Poland and Germany for the purpose of establishing an international agreement, but as it was not representative of the industry as a whole the experiment merely succeeded in showing the need for an agreement of a truly international character.

THE ACT OF 1930

The Midland scheme was the most successful of the three that have been indicated, but its own success was severely restricted by the competition of non-associated producers, representing about 10 per cent of the total output produced in the district, and by the competition of other districts. The scheme, however, served as a model upon which Part I of the Act of 1930 was based. This Act contained four parts, the third and fourth being concerned with labour problems. The hours of work were reduced from eight to seven and a half per shift, while provision was made for the establishment of a national industrial council to serve as an arbitration tribunal. In the paragraphs that follow we shall be concerned only with Parts I and II.

Part I of the Act provided machinery for the control of output and prices. A central council was established for the industry as a whole, while district or executive boards were instituted for the districts into which the country was divided for the purpose of the Act. The central council determined the standard tonnage for the industry as a whole while each district, being given a combined standard tonnage, determined the standard tonnages of the individual firms under its own control. The central council then indicated the percentage of the total standard that might be produced in a given period, the allocation to each district being the same percentage of its own standard tonnage. The executive board for each district in turn divided the total permitted output among its own members in the ratio of their respective standard tonnages. Moreover the executive board in each of the districts was the authority for controlling prices within that district.

It is clear that the purpose of Part I was to restrict competition. From 1924 to 1929 (a period of general industrial progress)

the industry had been suffering from "excessive" competition, which had reduced prices and repeatedly endangered the wages of the workers. The national stoppage of 1926 was still fresh in the minds of the architects of the Act and the only alternative to another experience of the same kind appeared to be a recognition of the circumstances that had led to that stoppage. By reducing output and maintaining prices it would be possible, it was held, to prevent a further reduction in the standard rates of wages of workers who were already badly paid, relatively to workers in other industries.

Many opponents of the scheme criticized it on the ground that it perpetuated the evil that the authors sought to remedy. Assuming a long-term decline to be inevitable, the real need and task of the industry was to reduce the producing capacity to the probable requirements of the future, but the new scheme, by giving each mine a standard tonnage and allocating to it a proportionate share of the existing demand, tended to perpetuate the existence of all existing mines. In reply to this criticism it was pointed out that the quota system operating in the German industry, by enabling one mine owner to purchase the "standard tonnage" of another, had accelerated the concentration movement and the elimination of surplus mines. But the duration of the Act of 1930 was to be restricted to two years unless the period was extended by a subsequent Act. A scheme that was guaranteed for a period of only two years could not be expected to produce the same effects upon the concentration movement as had been produced under the more permanent syndicate system of Germany.

The opponents of Part I of the Act proved strong enough to compel the inclusion of Part II which, at first sight, appears to be in conflict with Part I. By means of the quota system Part I secures an appropriate share of the total demand for each and every existing unit. The purpose of Part II was to facilitate the process of concentration by voluntary means and, if such means failed, to introduce compulsion. Provision was made for the appointment of a Coal Mines Reorganization Commission, which was to promote and induce the preparation of schemes of amalgamation and, in the absence of voluntary schemes and under

circumstances that appeared to favour concentration, to request the Board of Trade to introduce compulsory schemes. On the other hand all schemes, whether voluntary or compulsory, had to be submitted to the Railway and Canal Commission and could not be made operative without the sanction of that Commission. But the conditions to be satisfied before the sanction of the Canal Commission could be secured were those defined in the 1926 Act.

The Coal Mines Bill was prepared in 1929 and passed in 1930. The year 1929 was the most prosperous year in the post-war history of the world. The purpose of the Act was to deal with the problem of an industry that was slowly declining during a period of general industrial expansion. When the Act came into operation the world depression had already started. The coal industry also suffered from the severe cyclical depression, which was superimposed upon the persistent depression to which we have already referred. The controllers of the schemes established under the Act were called upon to administer such schemes under conditions that were never contemplated by the promoters of the Act.

Irrespective of the merits of Part I of the Act as a method of dealing with the persistent depression or the long-term decline of the industry, there is no doubt that it protected the industry during a period of serious crisis. Without the control and protection provided by Part I, it is difficult to see how the industry could have escaped such a fall in prices as would have made a fall in wages inevitable. Moreover the scheme enabled employment to be spread over the industry in a manner that would otherwise have been almost impossible. During the critical years of the depression it operated in approximately the same way as more orthodox schemes for working shorter time, frequently employed in the cotton industry and other industries in the nineteenth century.

But we have already seen that during the period of general recovery between 1933 and 1937 the coal industry failed to recover the ground that it had lost during the world depression. Between 1929 and 1937 the total output of coal fell about 17,000,000 tons, and this fall roughly represented the extent of the long-term decline during that period. The problem facing

Parliament in 1929 has again emerged, having been hidden from view by the problem presented by the world depression. If the present decline in general industry and trade marks the beginning of another cyclical depression, the long-term decline of the industry is likely once more to be pushed out of sight by the more urgent need for spreading the incidence of cyclical unemployment.

PART I IN OPERATION

The events of the past four years are apt to create confusion in the minds of those members of the public who fail to distinguish between Part I and Part II of the 1930 Act. In the present section we shall be concerned wholly with the operation of the scheme instituted under Part I, reserving the discussion of Part II for the next section.

It was almost inevitable that a scheme for restricting output, even a scheme established by Act of Parliament, should be the subject of criticism by those who would presumably benefit by a reduction in the price of coal. Exaggerated complaints of lack of supplies in unsatisfied markets were published widely in the Press. But it is undoubtedly true that, particularly in the early days of the scheme, some consumers experienced difficulty in fully satisfying their requirements.

The total output permitted by the central council was almost always found to be, in practice, in excess of the total amount of coal sold during the specified period. There is no evidence to suggest that the total demand of the community at the established minimum prices was ever quite equal to the total permitted output. While, however, the total permitted output was always in excess of the total requirements of the community, the distribution of that output among the districts did not necessarily correspond with the respective demands for coal from such districts. A total national output that proved to be sufficient, though not greatly in excess of total requirements, might, when divided among the districts in the ratio of their respective standard tonnages, prove to be too generous an allocation in one district and too scanty an allocation in another district. Thus, for example, an exporting district might be unable to sell all the permitted output, while an inland district, supplying household coal, might

find, during a cold period, that the market demand at the established minimum price was considerably in excess of the permitted output.

Serious attempts were made to overcome this difficulty. The unused portion of the permitted tonnage might be carried forward from one period to the next; quotas might be exceeded on payment of a penalty; unused tonnages might be transferred from one owner to another. Every effort was made to secure as much elasticity as possible. Nevertheless, it was frequently the case that individual customers either were unable, or were able only with difficulty, to satisfy their requirements.

From the point of view of the owners themselves the scheme proved defective in more than one respect. Some complained that while they supplied a special and developing market, the scheme prevented them from developing their business to an extent that would have been possible if, in place of the scheme, competition had prevailed even upon an overstocked general market. While it was true that they could increase their standard tonnage by purchasing that of other mines below the margin, it was unfair that they should be penalized for their success by being forced to pay a kind of tax upon development. The strength of this criticism was determined by the manner in which the executive boards of the districts adjusted the standard tonnages of developing mines on the one side and of decaying mines on the other. There is no doubt, however, that the difficulty has been largely overcome. Since 1930 the amalgamation movement has increased in strength. It was stated last year that 77 per cent of the total output of coal was being produced by 129 firms.

The second criticism from within the industry was that the scheme operated unfairly as between exporting districts and those districts that produced mainly for the home market. During the world cyclical depression the export trade in coal suffered far more than the domestic trade. The permitted output fixed by the central council was determined by the general average, that is to say, by the ratio of the prospective total demand, for both inland and export purposes, to the total standard tonnage of the country. This permitted output or quota was distributed, as already stated, among the districts in the ratio of

their respective standard tonnages, so that if the national quota was, say, 60 per cent, it was 60 per cent for every district. The result was that the accumulating depression left the exporting districts with a permitted output far exceeding the amount required to satisfy their established markets. Complaints were made that they employed their power to invade the markets of other districts, and the problem of inter-district competition became very acute. In September, 1934, a change was introduced into the central scheme: the export trade was separated from the inland trade for the purpose of the scheme, and the quota system applied to coal produced for inland consumption.

The third criticism was closely associated with the second. Under the Act of 1930 the control of prices was left in the hands of the executive boards operating in the districts. The established minimum prices were district prices fixed by the district authorities. Some districts complained that their neighbours and competitors delayed the fixing of prices until those fixed by competing districts were known, and then established minimum prices that would enable them to compete successfully. The need for some method of co-ordinating district prices was felt at an early stage in the history of the scheme. But the system remained unchanged until 1934, when the central council was given power, in the amended scheme, to receive and examine district complaints and, where necessary, to establish a more equitable relationship between district prices for the same class of coal. It may be noted in passing that the existence of this problem, which was among the most difficult of the many problems created by the scheme, constituted presumptive evidence that the quota established by the central council did not involve serious restriction of output. If the scheme of output control had been seriously restrictive in its operation, there would have been little or no inter-district competition and little or no temptation to one district to fix prices below those prevailing in competing districts.

The next noteworthy event occurred in the autumn of 1936, when the Mine-workers' Association submitted a request for a flat rate advance of 2s. per shift in the wages of adult workers and 1s. per shift in the wages of boys. Wages in many other

industries had already responded to the general industrial recovery and there appeared to be no discussion of the merits of the miners' case, on the assumption that the additional cost could be borne. But the total revenue of the industry was shown to be insufficient to enable the coal owners to satisfy the demand of the workers. At no stage of the discussion was there any evidence of the bitterness displayed in 1926 and in earlier disputes, but the year came to an end under the shadow of a national strike. The Government intervened in the dispute and eventually a compromise was reached under which the workers received one-half of the advance demanded and the mining council gave the Government an assurance that by the following July selling agencies or equivalent organizations would be established in all the districts. In the meantime many large consumers of coal accepted a modification of existing contracts and agreed to a rise in price.

CENTRAL CONTROL OF SALES. The first half of 1936 was spent in preparing amendments to the general scheme and making preparations for the establishment of organized selling schemes in the districts. The central council was not merely permitted but even required to issue directions to the districts regarding the terms and conditions to be laid down for the sale and supply of coal. Price co-ordination between the districts was strengthened. The council was also given power to deal with all complaints (not merely complaints regarding minimum prices) submitted by one district against another. As far as district selling schemes were concerned the Government had already indicated that the new schemes would only be sanctioned provided three conditions were satisfied, namely, that the schemes embraced all the coal owners in their respective districts, that they would prevent all inter-collery competition; and that they were so constructed as to prevent the possibility of evasion. The Government did not, however, insist that all the schemes should be of precisely the same character, although it insisted that all schemes should effectively control prices and the conditions of sale.

Three types of schemes were established. Some of the smaller districts established full-blooded selling syndicates, which purchased outright the coal produced by their respective members and undertook full responsibility for its sale. The remaining

districts, with one exception, adopted the method known as central control of sales

Under this system the colliery owner continued to sell his own coal and seek his own customers, but in each district a sales committee was formed (with an independent chairman) for the purpose of issuing permits regulating individual contracts. The colliery owner was required to submit to the sales committee every inquiry for a supply of a specific class of coal; the committee, in turn, fixed the minimum price and determined the quantity of coal to be supplied and the conditions under which it was to be sold.¹ The principle of allocation was preserved by the fact that each owner was granted a "trade share". If more than that share was sold the excess carried a penalty, while if less than the share was sold the owner received compensation in respect of the unused balance.

The exception to which reference has been made was the Midland (Amalgamated) District, where, even before the intervention of the Government, the members had formed themselves into selling groups, each of which was represented by a sales agent. In the new scheme this system was retained, and it was laid down that no coal owner should "sell or supply any coal produced from his mine otherwise than through the agency of the executive board". The executive board was empowered to act through the selling agent of the group concerned. The Midland District was divided into sections. In each section a committee was set up consisting of the general managers of the agencies of all the groups within that section. The committee was given power to fix minimum prices for coal and to prescribe conditions of sale within the section. Further, a district co-ordinating committee was set up consisting of the members of the section committees (five in number) the task of such (district) committee being to co-ordinate the efforts of the section committees. Thus the selling agent was to act for each member of the group, the agent being himself under the direction of the section co-ordinating committee, which in turn was subject to the supervision of the district co-ordinating committee. The "trade share" system was employed here as in the other cases.

¹ Small-scale transactions were not subject to this form of control

By the end of 1936 selling schemes were in operation in most of the districts, and they remain in operation at the present time. But even these highly developed schemes have failed to overcome all the difficulties of sales control. The year 1936 was one of general industrial recovery and of increasing demand for coal. Some coal owners claimed that the schemes were inelastic and that they were being prevented from increasing their sales on an expanding market. In the circumstances the chief subject of complaint was the system of "trade shares," which was designed primarily as a form of protection upon a falling market. The schemes of sales control of the second type were modified and the system of "trade shares" temporarily suspended.

The problem of inter-district price co-ordination continued to present serious difficulties. Joint committees were set up representing competing districts, the function of such committees being to establish and maintain inter-district co-ordination. Again, the price that was controlled under the earliest schemes was the pithead price or price charged to merchants and large consumers. The new schemes were also concerned with the condition of re-sale.

In the districts that had adopted the policy of central sales control it was prescribed that the permit for the sale of coal for re-sale by customers should indicate the market in which the coal could be re-sold and the minimum price at which such coal might be sold. This plan involved the registration of distributors, and the Secretary for Mines stipulated that the right of arbitration should be granted to those who did not appear on the list of such distributors.

Most of the difficulties that have been enumerated are of the kind encountered in framing and operating systems of control in many industries. There remains the question whether control is itself desirable. The new schemes were severely criticized by consumers, who complained about their effect upon prices. In an expanding market it was extremely likely that, even in the absence of control, prices would have advanced. Whether the advances prescribed under the scheme were greater than those which would have accompanied the free play of competition is a question to which statistics provide no answer. Nor is it

necessary, in a chapter upon the coal-mining industry, to discuss general issues.

PART II IN OPERATION

We now proceed to a short discussion of the operation of Part II of the Act of 1930 which, as already indicated, provided for the establishment of a Coal Mines Reorganization Commission. The purpose of this Commission was to promote amalgamation, and in the absence of voluntary schemes to request the Board of Trade to establish compulsory schemes. The Act also required that all schemes, whether voluntary or compulsory, should be submitted to the Railway and Canal Commission for sanction or confirmation. The Canal Commission, in turn, was not to confirm a scheme unless it satisfied the conditions laid down in the Act of 1926.

The Reorganization Commission began by stressing the need for complete amalgamation, which brought within reach the economies of physical concentration and other economies in the treatment, grading and transport of coal. At that stage in its history the Commission did not accept organization for the central control of sales as an adequate alternative to complete amalgamation. It expressed the view that while Part I was useful as a preliminary and temporary measure it was only by complete amalgamation of suitable firms, that is to say, the creation of large units through the amalgamation of units geographically connected, that the long-term problem of the industry would be solved and those technical and commercial economies secured which formed the justification for Government interference.

The Reorganization Commission found itself in serious conflict with the Mining Association, which not only expressed serious doubt about the possibility of reducing costs through the compulsory formation of large units but also stressed the fact that the future of Part II of the Act was so uncertain as to form a very frail foundation for the so-called rationalization of the industry. Thus the Commission embarked upon its task knowing that it was not welcomed by the representatives of the industry and that its efforts would be accepted with reluctance if not actually opposed.

But the Commission was also faced with another difficulty. It entered upon its task at a time when the industry was already suffering acutely from the world depression and the volume of unemployment, already large as a result of the long-term decline, was seriously increased. To enforce concentration under such conditions would not in any case be easy, to reply to the argument of the coal owners that under such circumstances it was desirable, in the national interest, to spread employment as widely as possible was almost impossible.

The failure of the attempt to convert the mine owners led to a change in policy. The Commission ceased to insist upon complete amalgamation and declared itself ready to accept, as an alternative, some looser form of association, including the selling syndicate and a scheme for the control of sales and prices. Such schemes were known as "partial amalgamation," the term having been defined in the 1926 Act in such a way as to include "the amalgamation of parts of undertakings and arrangements for the joint exercise of powers of working, treating and disposing of coal." The Reorganization Commission thus assumed, but wrongly assumed, that such a scheme would be accepted by the Canal Commission, as fulfilling the conditions by which its own confirmation was bound.

In May, 1935, a scheme was prepared for West Yorkshire which, in a modified form, was accepted for its own purpose by the Reorganization Commission. The Commission submitted it to the Canal Commission for sanction. The latter body, however, refused to sanction the scheme, which could therefore not be put into operation. If the scheme had been accepted by the Canal Commission, and brought into operation, it would have been followed by similar schemes for other districts. But its rejection meant that the work already done by the Reorganization Commission was completely destroyed. A fresh start had to be made, with complete amalgamation as the only objective in each of the districts. In July of the same year the Government requested the Commission to suspend action while its powers were being reconsidered.

The decision of the Government was embodied in a new Coal Mines Bill, introduced early in the following year. The purpose

of that Bill was to enable the duties of the Reorganization Commission to be discharged more effectively than in the past. It was clear that the Government favoured complete amalgamation in suitable circumstances, and that the Bill itself was designed to remove the difficulties that had previously proved too great. But the terms of the Bill were so strongly opposed that the Government promised to make several material alterations. For this reason the second reading of the Bill in the House of Commons was adjourned and the Government promised that a white paper would be prepared giving details of the proposed changes.

In November, 1937, the new Bill was presented to the House of Commons. This Bill is still under consideration and changes have already been accepted. For this reason a discussion of details, some of which may be further changed within the next few weeks, would fulfil no useful purpose. It may be pointed out, however, that the Bill embodies the recommendations of a Commission on Mining Royalties, which reported last year. The Commission recommended that a Coal Commission be created to acquire, and hold on behalf of the nation, all existing royalty rights. The new Bill establishes the machinery recommended by the Commission: the same Coal Commission is also to undertake (subject to changes defined in the Bill) the task previously performed by the Coal Mines Reorganization Commission. Thus the purpose of the Bill is to nationalize royalties and provide powers for enforcing complete amalgamation of colliery undertakings in suitable cases. The colliery owners raised no serious objection to the proposal to nationalize royalties but strongly opposed Part II of the Bill, which was intended to facilitate the use of compulsory powers to secure complete amalgamation of colliery undertakings.

The conflict of opinion between the Government and the colliery owners has not yet been resolved. Briefly, the view held by the latter is that compulsion is apt to destroy the value of amalgamation. If and where economics may be secured by amalgamation, the owners themselves are aware of the fact and may be expected to secure the end that is sought. The process of voluntary amalgamation in recent years is said to provide

ample evidence in support of this view. If, in spite of their knowledge of the facts, the colliery owners do not amalgamate in their own interests, an amalgamation forced from outside and based merely upon general information is not likely to prove of much value. Those who support the Government view hold that the amalgamation movement in recent years has been enormously strengthened by the ever-present threat of compulsion and that in the absence of Part II of the 1930 Act far fewer schemes would have been carried through. The discussion of the Bill, which is still proceeding, may be left there.

INTERNATIONAL TRADE AGREEMENTS

Reference should be made to two further events in the recent history of the coal industry. It has already been stated that in 1928 a group representing the Central Collieries Commercial Association (the body controlling the voluntary scheme of output control in the Midland area) discussed the possibility of establishing price agreements with representatives of the Polish and German industries. A provisional agreement (called "heads of agreement") with Poland was prepared and signed, but no further action was taken. In December, 1934, an agreement (covering a minimum period of three years) was concluded between representatives of the British and Polish industries. This is the only international agreement of its kind directly affecting the British coal trade. The terms of the agreement do not appear to have been published, but it is known that the agreement makes provision for periodic consultation upon such questions as export prices and for the maintenance of an agreed relationship between the quantities of British and Polish coal exported to certain markets. It is doubtful whether such restricted agreements can achieve much, for they leave unaffected a large area within which unrestrained competition may take place. Moreover, restriction confined to two countries leaves other exporting countries free to exploit a new advantage.

The second event was the conclusion of (government) trading agreements with Scandinavian countries. It has become the custom to control imports in one way or another. A coal-producing country such as France may endeavour to mitigate

a depression in the industry by restricting imports. It may decide to restrict total imports, leaving exporting countries to fight among themselves for the smaller market, or it may employ the method of restricting imports from each country. Countries that do not produce coal are in a different position. They desire to purchase coal as cheaply as possible and therefore regard competition between coal-exporting countries with favour. Given an adequate return in another field of economic activity they may be prepared to discriminate in favour of a particular exporting country.

During the depression Great Britain entered into trading agreements with Norway, Sweden, and Denmark. In all three countries the competition of Polish and German coal had become more intense and successful and British exports had suffered. To all three countries Great Britain was an important market for other commodities, such as agricultural produce and timber. Great Britain, under each agreement, was to be assured of a specified percentage of the coal imports of the other party to the agreement, 70 per cent for Norway, 47 per cent for Sweden, and 80 per cent for Denmark. These agreements proved of considerable benefit to the coal exporters of the eastern part of Great Britain. But Poland, deprived of part of her Scandinavian markets, retaliated by sending coal to Western Europe, where it competed with Welsh coal and deprived the Welsh industry of

EXPORTS OF COAL FROM GREAT BRITAIN
(Thousand Long Tons)

	1909-13 Annual Average	1924	1929	1933	1936	1937
Total	65,521	61,651	60,267	39,068	31,519	40,380
Total to European Countries	56,212	54,736	51,378	32,870	28,993	34,720
To Germany	8,999	6,824	5,521	2,360	3,046	3,286
To Belgium	1,707	3 330	4,110	1,131	524	925
To France	10 647	11 535	13,045	8,696	7 116	8,806
To Sweden	4,094	3,550	2,336	1,484	2,693	3,307
To Norway	2,069	1,822	1,111	983	1,327	1,599
To Denmark	2,112	3 551	3,111	2, 37	5 137	5 301

some of its market. Whether, on balance, the industry gained is a question that cannot be settled by reference to statistics.

But the table on p 249 shows that in spite of international agreements and of trading agreements between Governments the European markets for the British coal industry have diminished and that the fall in exports to Europe constitutes the greater part of the explanation of the fall in the total exports of Great Britain. The long-term decline continues, and it continues on account of the steady growth of European competition. When such competition is checked in one place the check itself tends to intensify it in another place.

THE ELECTRICAL INDUSTRY

THE ELECTRICAL INDUSTRY

ANY public utility, inasmuch as it supplies a service which must be used by the population as a necessity of life in the modern world, is in great measure immune from trade depression. The only exception to this would arise where the public utility in question had reached a point of maximum development and was in active competition with other public utilities performing part or all of its services, and to that extent was no longer in possession of a monopoly of supply. Examples of the latter can be found in railway transport and in gas, both of which showed at once the effects of the trade depression.

Electricity supply, on the other hand, being engaged in its first main period of expansion since the conclusion of the war, and still in a condition of declining costs and increasing net revenue, proved itself immune from the influence of the trade depression, and its immunity was such that it carried the electrical manufacturing industry with it. The only outward sign of the trade depression was represented by a contraction in the upward rate of growth, but no cessation took place in growth.

It may be useful at this stage to go rather more deeply into the question of immunity, because in the United States, Germany and France, for example, electricity supply did suffer most severely from a general trade recession, but not to the same extent as industry generally. What, then, specifically gave the electricity supply industry in Great Britain greater immunity than it possessed in the United States or France or Germany? The causes may be grouped under heads—

(1) The percentage of the total demand furnished by the public supply system to industry and the ordinary commercial consumer was lower in relation to the total of all supplies in this country than in those other countries. What is more important still, the industries it did supply were more closely allied to protected industries than to unsheltered. Thus the

principal exporting industries, such as iron and steel, coal-mining, all branches of textiles and chemicals, obtained the bulk of their supplies from generating stations operated by the industries themselves, and at best only used the public supply as a stand-by. When production from those industries shrunk, it led to the partial closing down of their own generating stations, but it had, paradoxically enough, the effect of maintaining or even increasing the demand on public supply systems, in the sense that a number of private generating stations were closed down entirely and stand-by supplies were utilized. The only two great exporting industries which did not enter into this classification were shipbuilding and general engineering, but not automobile construction.

(2) The general policy of development of the industry, owing to the fact that two-thirds of the output came from local authorities, was aimed more at the general public than at industry generally, with the result that the domestic and commercial consumer was brought into the electricity supply system rather more completely than in the United States. In practically every country—Germany may be excepted—the demand by the domestic consumer increased without interruption all through the slump period. It is a peculiar characteristic of the electricity supply industry in this country that it should have specialized very considerably in the electrification of domestic premises.

(3) Since the industry was still in a period of declining costs, combined with increasing returns, it was able to reduce its prices steadily without interruption during the period prior to the slump, and since its prices had not been inflated, but had, on the other hand, represented a continuously increasing service, they represented in themselves a considerable measure of security against the fluctuations of the trade cycle.

This was also characteristic of the Stock Exchange quotations for electricity supply securities. Such quotations, owing to the sure economic development of the industry, were not inflated during the period of intensive Stock Exchange speculation, but remained steady and continued steady. The fact also that increasing efficiency of production kept the retail price of

electricity steadily at a lower level than the course of wholesale prices, contributed to the stability of the industry and protected it from excessive and uneconomic fluctuations in demand.

The work of rationalization on the wholesale side of the industry represented by the Central Electricity Board and the Grid only began to make itself felt towards the beginning of 1933, but the publicity value and the prestige of this great experiment brought some accretion to electricity demand which was peculiarly valuable during the critical years of the depression, and the actual work of constructing the Grid gave employment to the electrical manufacturing and allied industries, not excluding shipbuilding,¹ which increased the demand for electricity and, what is probably more important, maintained a high level of activity in their workshops.

I

The statistics of workers in the manufacturing and electricity supply industry over the period from 1923 onwards, as given in the table on p 256, illustrate the situation quite clearly. They also illustrate the immense extension of a group of industries which fourteen years ago were not particularly important but are now among the most powerful in the country.

The statistics give a fairly clear indication of the change that has taken place in the configuration of the entire industry, including electrical manufacture and electricity supply within the same category, but they do not give the complete picture. One of the most important long-term changes that has taken place has been the growing reliance of the electrical manufacturing industry on public electricity supply. Certain things have contributed to this.

In the early years of development, when the industrial consumer installed his own generating plant and the use of purchased energy was comparatively infrequent for large commercial and industrial purposes, it was quite possible for the electrical engineering industry to prosper even if the public service of

¹ Certain shipbuilding firms carried out contracts for the erection of the towers

TABLE I
WORKERS IN ELECTRICITY INDUSTRY
GREAT BRITAIN

Year	Electricity Supply ¹	Electrical Manufacture ²	Total
1924	50,893	173,600	224,493
1925	55,515	186,000	241,515
1926	59,664	194,500	254,164
1927	63,556	195,400	258,956
1928	69,121	198,400	267,521
1929	74,751	213,200	287,951
1930	78,754	230,900	309,654
1931	81,897	244,000	325,897
1932	84,297	259,000	343,297
1933	89,196	266,500	355,696
1934	95,897	282,000	377,897
1935	102,157	296,200	398,357
1936	109,200	319,000	428,200
1937	116,500	367,000	483,500

electricity supply had not developed, and it is still true that there are considerable sections of electrical engineering which remain independent of the latter.

Thus whole industries, chief among them iron and steel, coal-mining, and the textile industry, have carried out a considerable work of modernization in isolation from the public electricity supply, and the business of manufacturing the necessary equipment for this work of modernization has kept certain sections of the electrical engineering industry active.

Again, in common with other engineering trades, electrical manufacturing has depended in the past on the export markets for the disposal of a considerable part of its output—at its highest point, namely, 1929, almost 30 per cent. New phases of manufacture have come into existence: to exploit a new invention, such as wireless, to contribute new ranges of appliances, to

¹ Based on Census of Production and Electricity Commission Returns (Annual).

² *Ministry of Labour Gazette* (Insured Workers), making allowance for employees aged 14-16

³ The unadjusted figure for this item was 223,270 as compared with the figure of 263,115 given in 1931 Census, Industry Tables. The difference is probably due to the inclusion in the Industry Tables of staff employees not covered by Unemployment Insurance.

accelerate mechanization of what were once purely manual operations, as in agriculture, or to contribute to the realization of a higher standard of living, which only indirectly impinged on electricity supply. The best example of the latter is the provision of electrical equipment for motor cars.

Now, however (and the years of depression have accelerated the tendency), the relationship between the electrical manufacturing industry and public electricity supply is very much closer, and it may be explained under six heads—

(1) The mere business of wiring the premises of new consumers, partially represented by the increase in numbers under wiring and contracting, but more particularly under cable and lamp manufacture. An illustration of this tendency is shown in the statistics of new consumers.

Prior to 1931 the greatest annual increase in the number of consumers connected to the supply system was 543,000, and this was in the year 1930-31. Since that time the number has risen to over 800,000.

(2) The study of generating plant design and the arrangement of the modern power station has widened the gap between the efficiency of the large generating unit and the small, with the result that the small private generating station employing units of less than 2000 kilowatts has made way for the use of energy purchased from public supply networks fed from power stations with units aggregating up to 100,000 kilowatts. This development has been most marked since 1931 and it has led to the conversion of large industrial plants to the public supply. What is more important still, it has ensured that a very considerable proportion of new manufacturing enterprise will purchase its energy from the public systems

In other words, the proportion of the electrical manufacturing industry supplying generating plant for industrial purposes has declined fairly rapidly and the firms most directly affected have either enlarged their capacity to tender for public supply requirements or they have changed over to a new type of manufacture.

(3) The change of development practice on the part of supply

undertakings, where considerable use is made of hire purchase and direct rental facilities, even for the provision of small industrial and commercial appliances, in addition to domestic and agricultural, has reduced the outlets available for the manufacturer serving the customer direct. What is more significant is that, through their control of an increasingly large percentage of the market, supply undertakings can determine or influence very markedly the design and type of appliance carried out in the manufacturer's workshop.

(4) The immense increase in the home market during a period of semi-paralysis of exports has reduced the proportion represented by exports to the total turnover of the industry to about 15 per cent or even less. Whether this development is desirable or not is a matter which concerns the electrical manufacturing industry very little. Protection may have contributed somewhat to this change, but the electrical manufacturing industry has never been seriously affected by imports in its principal products. It has had to face continuous and severe competition in such things as lamps, switches, wireless components, and small mass-produced articles, but some part of the competition, on those lines at least, has been due to a price-fixing policy not always determined by conditions of efficiency or cost in production.

(5) The expansion of electricity consumption has permitted a fairly high degree of specialization in appliances which were once regarded merely as a side-line and it has altered the characteristics of many manufacturing plants. In one manufacturing plant, for example, which was principally engaged on the provision of generating plant and heavy industrial machinery prior to 1931, the manufacture of domestic appliances has developed so rapidly that it now overshadows all the other products of the factory. Such a change has caused modifications in research, development, and sales activities. The result is that electrical manufacturers may not only be less productive on export account and less interested in business outside of the control and the influence of the electricity supply undertakings, but they are concentrating on the study of designs and methods which will intensify dependence on the latter.

On the whole, such a change must be regarded as a sound development, since it is in line with long-term scientific and economic change

(6) The development of organized types of industrial enterprise, such as trading estates, where a manufacturer obtains his essential services from an organization that lets a factory or space for manufacture, has tended to simplify the question of electrical energy for manufacturing purposes.

The ordinary manufacturer, who rents or builds a factory on a trading estate, has no need to occupy himself or his technical staff with questions of power supply. He can concentrate on manufacturing equipment, and as the movement towards installation of factories in trading estates continues and increases, so the reliance of the manufacturer on purchased energy will be increased. In other words, the industrial demand is steadily narrowing on the side of generating plant and equipment, but against this must be placed the fact that the more complete mechanization or motorization of manufacturing activities and manufacturing equipment has increased markedly the demand for small industrial consuming appliances

II

Production of electricity rose from 11,413 million units in 1931 to 22,877 million units in 1937, so that in six years it has doubled itself, the increase being the most spectacular recorded in the history of the industry. The annual rate of expansion is now in excess of the total national production in 1913. This improvement is considerably in excess of what was estimated (in 1927) by the Electricity Commission when it was compiling particulars relating to estimated output of the various scheme areas of the Grid over the period ending 1941.

At that time, the estimate was that, by 1941, the national production of electricity would have risen to 25,000 million units. Even then the assumption was made that the public supply systems would be successful in converting the majority of private industrial plants, but a comparison of the production of electricity in private plants as recorded by the censuses of 1930 and 1935 would tend to indicate that, while certain industries

have come over to public supply, new industries have come into existence and older industries have immensely increased their output. The outstanding examples of this change are provided by the manufacture of newsprint, chemicals, and artificial silk. In each of those cases, the condition of manufacture itself is such as to make electricity a by-product of some other process, and to that extent less expensive to the manufacturer than electricity provided from the most efficient super power station.

A remarkable feature of progress during the last four years has not been, however, the increased demand from industry, but the enormous diversity of the demand, so much so that British industry has been developing new types of consumption which are peculiar to this country alone: the use of electricity for all-electric or coal-electric slum clearance schemes, and the rapid and almost universal adoption of electric heating for public buildings, such as university colleges, schools, churches, banks, office buildings, hospitals, health centres, town halls, civic centres, factories, railway stations, clubs, warehouses, even to the extent of heating swimming pools and, in a number of important recent installations, the application of large-scale electric cooking in hotels and restaurants—these represent developments which have been more advanced in this country than even in the United States, and together they have placed new responsibility on the management and administration of the industry.

When the number of consumers, as in 1923, totalled only 2 millions, the majority of them lighting consumers, the task confronting the distributors, who at that time, as now, numbered over 600, was rather different from that which now confronts an industry serving over 9 million consumers, with an enormously diversified range of demand. To give one example, it was comparatively easy in 1923 to supply and service 20,000 electric cookers, practically none of which were covered by rental or hire-purchase arrangements, but it is a more difficult business to deal with over a million electric cookers, as in 1938, practically all of which have been supplied under direct rental or hire-purchase systems or, in some cases, installed rent free against a guaranteed electricity consumption.

With this diversity in actual number and type of demand has

come complication in the demand itself. Thus, an estate company or an individual may build a block of residential flats which comprise not only actual living accommodation, but such things as swimming pool, restaurant, laundry, shops, concert halls, cinema, and, in one or two extreme cases, centres of instruction.¹ The supply undertaking, in this case, has to give a quotation not merely to the estate company for the supply of the communal services, but to the individual flat dweller and the individuals or institutions that have obtained from the estate company special concessions dealing with shops, etc., and it has also to work out quotations for the single services. This type of activity, which is inevitable under modern conditions of living, has imposed a severe strain on the sales and service organization of the industry, but the industry on the whole has proved itself equal to the pressure placed on it.

With this extension has come examination and application of simplified methods of electricity distribution. The result of this is to be found most clearly in rural electrification and its extension to outlying areas. There is no village with a population of 500 and over in Great Britain which is without a supply of electricity and rather more than 50,000 farms are connected to public supply. This last figure only represents about 12 per cent of the total number of farms or holdings in the country but it compares favourably with corresponding figures in other industrial countries, and the use made of electricity by those farms is, as a rule, much more extensive in this country than in the United States or Germany.

A marked feature of development has been the almost universal application of the two-part tariff as a substitute for, or an addition to, the flat lighting rate. This two-part tariff combines a fixed annual charge, equivalent roughly to lighting consumption, with a low running charge, which is destined to encourage large-scale consumption of electricity.

Those activities have led to the introduction of new industries which are engaged in producing, on a large scale, products

¹ A good example is provided by the fourteen-story block of flats at St Leonards-on-Sea entitled "Marine Court" (See *Architectural Review*, February, 1938)

with previously only a very limited market in front of them. In practically every case, the expansion of demand which sufficiently justified the enterprise was based first of all on the design of a commercial product efficient enough to incorporate the results of careful technical research and exact engineering design, and of a favourable competitive condition caused by the decline in the cost of electrical energy. Agriculture, for example, in its evolution towards a more highly mechanized condition of existence, has provided a market for a very varied range of electrical equipment, such sections of agriculture as dairy farming, market gardening, poultry or fruit farming, have called for a complete range of electrical and mechanical equipment sufficiently large to maintain in existence more than one firm in each section. Again, the rise in the standard of living and the diversity of interest and entertainment, as represented by such things as milk bars, road houses, cafes, and restaurants, or by broadcasting, accelerated and more luxurious transport, or by the contemporary cinema, are reflected in the appliances and equipment supplied by the electrical manufacturers. The progress of research and scientific knowledge in heating and ventilation, for example, has led to the elaboration of more efficient methods and the designing of apparatus and machinery for application of such methods to public buildings, factories, and workshops. The manufacture of electrical domestic appliances alone now represents a market amounting to many millions of pounds. The production of vacuum cleaners is now well in excess of £3½ million and of electric cookers not far short of £2 million.

Some part of the success of the industry in creating those new types of demand may be attributed to the fact that the generation and main transmission of electricity, since it is now in the hands of a national body, the Central Electricity Board, has ceased to be the preoccupation of supply undertakings, and engineers and executives generally have been able to devote more energy to electricity distribution and concentrate intelligence on problems of salesmanship and the broadening of the basis of electricity consumption.

To this may be attributed also the success of the industry in adapting itself to the much more involved and difficult

conditions caused by the immense increase in the number of electricity consumers and the great expansion of physical assets represented by the public utility. The capitalization of electricity supply has actually risen from £318 million in 1930 to £462 million and £485 million in 1935 and 1936, and may be estimated now at rather more than £520 million. No change has taken place in the configuration of the industry during the period of active trade conditions; the proportion of the total business done by local authorities and municipalities is almost exactly the same.

There has been a certain amount of consolidation among supply companies, with some reduction in the number of independent undertakings, and there has been a considerable extension of the range of control of holding companies. Thus, if one were to sort out the authorized undertakers to make allowance for unification of control, financial or technical or both, one would reduce the total number from its present figure of 626 to 460. The number of companies and persons given in an independent summation as 247 is reduced to one-third as the result of such centralization.

Compared with other industrial countries, the output per undertaking, if allowance is made for centralization, is very much larger in Great Britain and this must have a bearing on the economies or otherwise which might be made in electricity distribution through future centralization of control.

It is difficult at the moment to determine what would be an economic unit, from the point of view of distribution, since research into distribution costs has not been undertaken to any serious extent and the evidence taken by various committees, including the McGowan Committee, has not been successful in elucidating any common principles or defining any real limiting factors. In the generation and main transmission of electricity, this is not the case, since, owing to the Central Electricity Board being in continuous operation practically since the end of 1932, a certain amount of data exists regarding the limits of economy to be effected by centralization and the most desirable type and size of generating station.

At the present time, about 90 per cent of the national output of electricity is concentrated in about 150 generating stations,

fifteen of those stations in 1937 supplied over 50 per cent of the total units generated for the Central Electricity Board in the areas in which the Board is trading, namely, the whole country with the exception of North Scotland and North-east England.

If we look at the capacities of those stations, we find that the largest station in the country, namely, Barking, has a capacity of 462,500 kilowatts, followed by the combined Deptford East and West with 360,750 kilowatts, Hams Hall, Birmingham, with 249,450 kilowatts, Battersea with 240,000 kilowatts, Fulham with 190,000 kilowatts, and Dalmarnock with 187,500 kilowatts.

There has been also a fair measure of specialization in the capacity of the generating units installed. The following table, giving the extensions of generating stations from 1930 to 1937 inclusive, shows the position—

TABLE II
CAPACITY OF TURBO-GENERATING UNITS, 1930-37¹

Capacity of Units Kilowatts	Total Capacity Kilowatts	Percentage
100,000	200,000	5·7
75,000	300,000	8·7
60,000	240,000	7·0
50,000	1,100,000	32·0
40,000	80,000	2·3
30,000	1,290,000	37·5
25,000	125,000	3·6
20,000	20,000	0·6
15,000	60,000	1·7
12,500	12,500	0·4
10,000	20,000	0·6
	3,447,500	100·0

With this appreciation of desirable units has come a certain degree of stabilization in the operating efficiencies of the stations themselves. The over-all thermal efficiencies of the twenty-five most efficient stations in the country are coming closer and closer to that represented by the country as a whole, but this may be attributed to the increasing proportion of national output taken by those stations rather than to the greater improvement of stations other than the twenty-five.

¹ Including plant on order or sanctioned as well as installed.

TABLE III
STEAM POWER STATION EFFICIENCY IN GREAT BRITAIN

Year	OVER-ALL THERMAL EFFICIENCY (PER CENT)	
	All Stations	25 Most Efficient Stations
1930	16 15	21 16
1931	16 86	21 61
1932	17 51	22 24
1933	18 37	22 79
1934	19 30	23 76
1935	20 15	24 09
1936	20 87	24 30
1937	21 68	24 84

In any case, the electricity supply industry has, through the Central Electricity Board, obtained greater control over fluctuations in capital expenditure and generating assets and has, through its capacity to concentrate on distribution problems, a fuller knowledge of the market available for it than it had prior to the slump. One would expect it, therefore, to present an even greater resistance to the onset of trade fluctuations in the future, provided, of course, that success in developing types of consumption other than industrial more than outweighs its success in converting vulnerable industries to the use of purchased energy.

III

The greatest single factor in the post-slump situation has been the entrance into operation of the Grid under the control of the Central Electricity Board. The Central Electricity Board was created by the Electricity (Supply) Act of 1926 and began the construction of the Grid in 1927. The last tower of the Grid was erected in September, 1933. Since then there have been additions to the transmission system and some expansion of transforming and switching equipment of the substations. At the end of 1937, however, the Grid comprised about 4180 miles of primary and secondary transmission lines, linking up selected generating stations with a capacity of over $7\frac{1}{2}$ million kilowatts by means of transforming and switching stations, with a capacity not far short of 10 million kVA.

The total cost of erecting the transmission system, exclusive of capitalized interest, was about £27,800,000, and the greater part of the expenditure involved was allocated during the slump years, 1930 to 1933, so that the Board was able to take advantage of falling prices, which made the cost of construction come very close to the estimates calculated in 1927, to carry out a slightly more ambitious scheme without additional cost and to keep the manufacturing workshops at a steady level of activity.

On the other hand, the electrical manufacturers have maintained that the rationalization of generating stations through interconnection resulted in capital economies, represented mainly by the greater use of generating plant assets, almost exactly equivalent to the cost of the Grid. They have tended, therefore, to assume that the reduction in the demand for generating plant was no more than offset by the increase in the demand for equipment required for the Grid. While there may be some measure of truth in this, the time factor is of some importance. The economies effected by interconnection could only take place during a period of full or reasonably full operation of the Grid—in other words, after the beginning of 1933. Those economies would come most strongly, as a consequence, into operation during precisely those years when trade recovery was greatest, namely, 1935, 1936, and 1937. The effect has been, therefore, to spread a more even volume of activity over the manufacturing industry.

The position of the Grid is shown in Table IV (facing p. 270). In every area, with the exception of North Scotland and North-east England, the Grid is in full operation and in 1938 it was due to come into operation also in North-east England, so that 98·2 per cent of the population is now affected directly or indirectly by its operations.

The total value of the transactions of the Board, as represented by the purchase and sale of electric energy, is now in excess of £30 million. The annual capital and interest charges, including sinking fund, have been established as between £2 million and £2,500,000, but, when the various Grid tariffs were calculated, a ten years' budget was adopted which aimed at equalization of costs and expenditure over the entire period, the

losses of the early year being balanced by the increasing profits of the later

In the year 1937, the Board made a gross profit of £2,014,000, and it was able, consequently, to put aside to reserves the sum of £342,000. The Board has, therefore, moved out of the period of deficits into a period of surpluses and it is expected that the estimates applicable to the whole ten years' period will be realized.

A quotation from the Tenth Annual Report of the Central Electricity Board, for 1937, gives some indication of the extent of the co-ordination work carried out in connection with the Grid system—

In the areas in which the Board were trading electricity was being distributed to consumers through 550 separate authorized undertakings. Of those undertakings, 203 were being supplied directly by the Board and a further 293 were connected to the Grid through the systems of undertakers who received direct supplies from the Board. Some of the remaining 54 have made arrangements to take direct or indirect supplies from the Board in 1938. Most of the others are small undertakings, remote from the Grid system and are in the meantime supplied from local hydro-electric or other stations or from non-statutory sources.

Following on the work of rationalization in production and main transmission, the Government appointed a committee under the chairmanship of Lord McGowan to deal with the possibility of rationalizing electricity distribution. This committee reported in May, 1936, and a bill was prepared to translate carrying into legislation some of the recommendations made by that committee.¹

It is unnecessary in this short survey to go over this ground in any detail.² The main principles adopted may be summarized—

(1) It is advisable to accelerate the movement towards

¹ At the time this was written, i.e. February, 1938, the Bill had not been introduced into the House of Commons.

² The necessary documents describing the situation are to be found as follows—

Report of the Committee on Electricity Distribution, May, 1936 (McGowan Report), published by H.M. Stationery Office, 2s.

Government White Paper on Electricity Distribution, 1937, published by H.M. Stationery Office, 1s.

Report on the Supply of Electricity in Great Britain, issued by P.E.P. (Political and Economic Planning), 16 Queen Anne's Gate, S.W.1, December, 1936, 6s.

uniformity and standardization in the supply and distribution and servicing of electricity.

(2) The somewhat unsatisfactory and unco-ordinated degree of electricity supply administration, as carried out by a variety of undertakings such as local authorities, power companies, holding companies, joint electricity authorities, joint electricity boards, should be straightened out by amalgamation. The effect of such amalgamation would be to reduce the number of undertakings not only in number but also in type, but the justification for such amalgamation should be the realization of greater economies in distribution and greater capacity to carry out efficiently electrical development. Such amalgamation could only take place after fairly careful local investigation.

(3) In the event of amalgamation, the compensation payable by the absorbing undertaking and the methods by which such compensation should be computed are carefully determined and they tend to adopt the American principle of prudent investment rather than reproduction cost.

(4) The determination of a reasonable return to the industry which, in the early legislation, took the form of a sliding scale in the case of the electricity supply companies, has now been adjusted to modern conditions. The defect of the old sliding scale system was to be found in the fact that no allowance was made for the effect of improvements in technique and the commercial application of scientific research on the cost of producing and distributing electricity. The minimum prices determined under the old sliding scales merely became farcical within a short time after the promulgation of the special legislation determining them.

(5) Codification and simplification of electricity supply legislation. Although in the early stages of the organization of electricity distribution it may be necessary to promote a number of special orders embodying proposals for amalgamating different undertakings, the purpose of part of the new legislation at least is to reduce the number of special orders or Acts of Parliament which could be discharged much more simply and effectively without the use of set legislation.

There are other details in the new legislation which are of some interest, but it will be seen that no attempt has been made, as in the case of the formation of the Central Electricity Board, to deal with the question of electricity distribution either through one all-powerful body or through one definite Act of Parliament. This may be due to the feeling that the modern conditions governing electricity distribution have been severe enough with the intensification of competition from other sources of heat and energy to create higher standards of efficiency and service.

What were once uneconomic units, when the output of the industry was 5000 or 6000 million units, have now become economic units through the process of adaptation caused by expansion in output and very rapid growth in administrative responsibility.

The industry has also not yet been subjected to full-scale economic investigation (to which the principles of public utility economics have been applied) and it is an extraordinary thing that this kind of investigation has not yet been undertaken as a research subject by any university in Great Britain. In this respect, at least, recourse has been had not only to American practice but also to American theory.

At the end of 1937, however, one could state this position in electricity supply—

(a) The Grid, as operated by the Central Electricity Board, was in successful technical, commercial, and financial operation.

(b) The electricity supply undertakings, although on the whole they had proved themselves equal to the task of meeting the vast expansion of electricity demand without serious dislocation, were engaged in examination of the possibility of rationalization and co-ordination, and they were assisted in this respect by the largely permissive legislation proposed by the Government.

(c) The physical development of electricity supply had reached the stage where, at the rate of development occurring in 1937, something like saturation in the number of consumers would be reached in three years' time. The industry had widened and intensified demand with the result that in many phases of electricity consumption, such as in the electrification

of slum clearance schemes, the development of electric heating and even in such things as railway electrification, as carried out by the Southern Railway particularly, this country was ahead of the rest of the world.

IV

The economic position of the electrical manufacturing industry may be estimated from what has already been described in connection with electricity supply, and it is only necessary to outline certain developments and problems additional to those already indicated.

They are, briefly—

(1) The electrical manufacturing industry has changed its character slightly in two directions—

(a) Owing to the widening of the home market and the change to mass-production conditions of manufacturing enterprises which previously had only a small market for their appliances and are now able to dispose of them in vast bulk, the large composite firm has ceased to represent as large a percentage of the total output of the industry as before. It is true, of course, that a number of those firms have been able to enter into the market in its new phase, but they have seldom, if ever, taken the initiative and much of the original design and development work has been carried out by smaller firms most capable of immediate adaptation to the changes and requirements of the new market. Nevertheless, the industry has some of the largest manufacturing concerns in the country. Two groups, for example, employ more than 40,000 workers each; there is a considerable number of firms employing between 7000 and 14,000 workers. To say, therefore, that the industry is changing its character as one dominated by large concerns to one somewhat more specialized and less compact would be inaccurate, but, in the last four years particularly, an immense number of small firms has come into existence to supply special phases of electrical development. Hundreds of firms supply wireless equipment and more than a thousand firms domestic electrical apparatus.

While the industry is highly organized over a fairly large range of its products, particularly in heavy engineering, it has still to face the problem of the new firm developing a new kind of product for which a sufficient market exists.

(b) Arising out of (a) has come a sharpening of the definition between firms supplying goods for export and firms concentrating exclusively on the home market. It is a somewhat unsatisfactory condition that few of the new firms are making any serious effort to develop export business and that the principal export activity of the country still remains with firms which have always specialized in it. To that extent, therefore, the industry on the export side is probably more vulnerable now than it was some years ago. This does not mean that it has weakened in its competitive ability in the lines for which export markets have already been created, but it has not made it its business to develop outlets in export markets for the new and specialized products which are now being turned out in such immense quantities.

The conditions of manufacture and of sale may, of course, make it impossible to meet foreign competition, but we have no information which would allow us to form any judgment on the matter. On the other hand, both Germany and America have been very successful in developing exports of consumers' apparatus, particularly wireless and domestic appliances.

(2) The electrical manufacturing industry has been dependent on certain well-defined activities for its prosperity.

The first and most important activity, namely, the extension of demand for generating plant and ancillary equipment resulting from the large increase in the public demand for electricity, has already been described. It may be interesting to note that before the slump the highest annual turnover of generating plant for both home and export purposes did not exceed 1,100,000 kilowatts; the demand in 1937 on home account alone, inclusive of industrial plant, was in excess of 1,200,000 kilowatts.

The second source of demand is to be found in the re-equipment of the older industries; the most important examples of

this are the iron and steel industry which, in addition to electrifying almost entirely its manufacturing processes, has increased its productive capacity in steel production by about 3 million tons per annum. A certain percentage of the new plant capacity, both mechanical and electrical, has been imported from the United States and Germany, but by far the greatest proportion of the new equipment has come from British firms. The amount of new equipment represented by the rehabilitation of the iron and steel industry has had no parallel in any industry before or after the war. Less marked has been modernization of coal-mining, woollen and cotton textiles.

In addition to those older industries has come a series of new industries which must be regarded now as fundamental. They are newsprint manufacture, artificial silk, and certain sections of the chemical industry. Very large extensions have taken place in cement, brick-making, glass, woodworking, and other industries associated with building. Not least important have been the extension and modernization of the electrical manufacturing industry itself. There is practically no manufacturing firm in the country which has not increased or reorganized its manufacturing capacity since the slump, or built new research laboratories and test installations to deal with extra high voltages and pressures.

(3) The great public services and utilities, owing to the regime of cheap money and easy credit, accompanied by a certain degree of Government assistance in the form of guarantees for new loans, have been extraordinarily active since 1930. Dock and harbour boards have created new facilities and have carried out certain schemes which, like the Mersey Tunnel, have had more than a national importance.

The railway companies, including the London Passenger Transport Board, have carried out new schemes of electrification and extension of services which, in the aggregate, are probably not less important to the electrical industry than the construction of the Grid. The most significant of those developments is to be found in South-east England and in the London area, where the enterprise of the Southern Railway in electrifying practically all its lines east of Portsmouth, Guildford,

and Woking; in building a series of new stations, as at Southampton and Surbiton; in extending port facilities, as at Nine Elms and Southampton Docks, has been instrumental in creating conditions contributory to a boom in trade

(4) The Government rearmament proposals, entailing the construction and equipment of shadow factories, and the extension of manufacturing plants over a wide range of industries, have created and will create a demand for electrical equipment.

(5) The building boom, in addition to creating a demand for electrical appliances for individual houses and for blocks of houses, has taken its most spectacular form in the construction of residential flats in London and in the large centres of population. The total number of such flats built over the period 1931-7 must be in excess of 50,000, and the majority of them are all-electric, even to the extent that the swimming pools in the buildings and the buildings themselves are heated by electricity. Again, the provision of new cinemas, new civic centres, and similar buildings, has contributed to the formation of a demand for new types of apparatus.

Those developments, additional to ordinary house-building, will probably be in the aggregate more profitable and more productive of activity for the electrical manufacturing industry than even new housing schemes

(6) In the export markets, the most important developments have been the immense increase in productive capacity of the gold-mines of South Africa, resulting from the rise in the sterling value of gold. The prosperity of the Rand has brought with it the revival of public services, industrial activity, and railway electrification in South Africa, with the result that this market has been easily the most important export market since 1931.

The improvement in the prices of commodities and the widening of the agricultural market has created conditions of great prosperity in Australia and New Zealand, so that both markets have revived and extended electrification projects which were held in abeyance during the period of financial stress, although neither market has returned to the conditions ruling before the slump.

A feature of export developments has been the application of credits to what might be regarded as secondary markets with a view to the modernization and improvement of essential public services. The most important markets where this combination of financial and manufacturing enterprise has been most productive of results have been Brazil, Poland, Turkey, and China, including Manchukuo. The industry, however, has not been successful in regaining its previous export business in certain dominions, such as Canada and Eire, while India has been a disappointing market.

On the other hand, Scandinavia has recovered and other markets not generally continuously active, such as Malaya and Egypt, have been the centre of fairly important new power schemes.

The value of the exports had in 1937 almost reached the level of 1929, and, if some allowance be made for falling prices, was definitely higher. On the whole, one would say that the competitive capacity of the industry in those products which had an export market prior to the slump is at least as good now and is probably better than it was in 1929.

The industry, however, is less committed to a policy of export business at all costs owing to the prosperity of the home market, and its export business, owing to the operation of certain international agreements, is probably more profitable now than it was in 1929. To what extent this will continue to be the case in the event of a recession of home trade during the next two years must depend on the foreign political situation.

The industry has been active in developing research, not as an addition to manufacturing enterprise which may or may not be discontinued, but as an absolute necessity for the successful existence of the industry itself. New types of consumption requiring new types of apparatus are being developed much more rapidly than ever by the electricity supply industry; the public demand for good design, coupled with higher standards of efficiency, and the increasing demand for absolute accuracy and reliability in electrical apparatus, have necessitated the most

careful study of development in manufacturing methods and of development policy generally.

V

At the end of 1937, one could say that all phases of the electrical industry, supply and manufacture and ancillary industries attached to them, were working at full capacity, the only exception being the wireless section, which was passing through a difficult period of market saturation prior to the introduction of television. Both supply and manufacture were operating at a standard of efficiency higher than any previously recorded, so much so that the problems confronting administrators and executives were not so much problems created by marketing conditions or by the pressure of competition, but by the desire to introduce greater uniformity into the control and operation of the industry itself.

The Government's proposals for the reorganization of electricity distribution were only one phase of this movement towards the encouragement of a more orderly development.

At no time had the industry been more powerful or more effectively employed in advancing the economic welfare of the country.

APPENDIX

STATISTICAL TABLES A-F

TABLE A
PRODUCTION OF ELECTRICITY
MILLION KWH.

	1930	1935	1937
Public Supply	10,916.7	17,569.3	22,905.0
Railways and Non-statutory Undertakings	1,389.3	1,641.9	1,745.0 ¹
Private Industrial Plants	5,371.7	6,064.9	7,694.0 ¹
TOTAL	17,677.7	25,876.1	32,344.0 ¹

¹ Estimated.

TABLE B
RAILWAY ELECTRIFICATION

	1930	1936
Miles of Track Electrified . . .	615	770
Train Miles	55,613,641	71,703,976
Vehicle Miles	287,416,097	388,437,276
Engine Hours in Traffic		
Electric	3,342,450	2,171,130
Total for Great Britain (all Types)	67,063,673	64,293,071
Consumption of Electricity (kWh)	759,977,904	1,049,670,318
Number of Passengers Carried .		741,125,000 ¹
Rolling Stock Numbers		
Electric Locos	40	64
Electric Rail Motor Vehicles .	2,416	2,914
Electric Passenger Carriages .	2,889	3,545

TABLE C
STATUTORY SUPPLY UNDERTAKINGS
Number of Consumers, Connected and Maximum Loads and Units
Generated

1930-1 to 1936-7

Year	Number of Consumers	Kilowatts Connected	Maximum Load	Units Generated
		kW.	kW	Million kWh.
1930-1	4,014,895	12,864,411	3,801,342	10,947.5
1931-2	4,646,509	14,319,422	3,950,928	11,532.7
1932-3	5,336,847	15,826,511	4,156,410	12,347.3
1933-4	6,109,595	17,973,623	4,802,032	13,914.9
1934-5	6,952,714	20,106,615	5,297,462	15,587.1
1935-6	7,704,468	23,173,980	6,044,011	17,970.8
1936-7	8,557,175	26,466,816	6,609,132	20,524.5

¹ Southern Railway alone . . . 273,255,000
In first nine months of 1937 . . 217,819,000

TABLE D
CAPACITY OF ELEVEN LARGEST GENERATING STATIONS
(Including Plant on Order at December, 1937)

Station and Owners	Capacity of Plant MW
Barking (County of London E.S. Co.)	462.5
Battersea (London Power Co.)	345.0
Hams Hall (Birmingham Corp'n.)	249.45
Dalmarnock (Glasgow Corp'n.)	238.5
Deptford West (London Power Co.)	222.0
Clarence Dock (Liverpool Corp'n.)	202.5
Dunston B. (North-eastern E.S. Co.)	200.0
Ironbridge (West Midlands J.E.A.)	200.0
Fulham (Fulham Borough Council)	190.0
Barton (Manchester Corp'n.)	175.5
Brimsdown B. (N. Met. E.P.S. Co.)	160.5

TABLE F
FOREIGN TRADE IN ELECTRICAL MACHINERY AND APPLIANCES
In £'000

Year	EXPORTS			IMPORTS		
	Machin- ery	Appara- tus	Total	Machin- ery	Appara- tus	Total
1929	6285	13,159	19,444	1901	6510	8411
1932	3642	11,928	15,570	407	2745	3152
1933	2636	7,438	10,074	227	2439	2666
1934	3278	8,033	11,311	347	3061	3408
1935	4072	9,541	13,613	352	3089	3441
1936	4893	10,021	14,914	509	3662	4171
1937	5693	12,547	18,240	678	4083	4761

In £'000

Exports to—	1929	1932	1933	1934	1935	1936	1937
Australia .	3479	587	750	1130	1628	1903	2844
British India .	2996	1645	1308	1691	1872	2086	2211
Union of South Africa .	1342	1120	1604	2302	2940	3222	3611
Argentina .	1145	246 ¹	213	303	404 ¹	—	—
New Zealand .	941	424	393	475	644 ¹	851 ¹	1289
Canada .	561	236	308	151	191	251	411
France .	350	—	291	344	—	—	—
Russia .	332	—	344	—	—	—	—
Eire .	517	—	373	431	—	—	—
Netherlands .	477	—	217	329	—	—	—

¹ Incomplete.

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RAIL TRANSPORT

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RAIL TRANSPORT

THE aim of this chapter is to show what share the railways of Great Britain have had in the revival of industry and trade that has taken place since 1932 and, since they are not passive agents, to indicate the ways in which they have in turn contributed to that revival. The effect of the depression on the railway industry, as represented by the four main line companies, was discussed in the corresponding chapter in *Britain in Depression*. That depression began in 1929 and touched its lowest point in 1932, the years 1933 and 1934 being years of only partial recovery. Though it has become common in recent years to make comparisons with 1929, it is well to remember that 1929, though a year of considerable activity, greater in most industries than in any year since the post-war depression, was, at least so far as railways are concerned, not exactly a boom year. Nevertheless, 1929 may for our present purposes be taken as a year of comparative prosperity, and 1932 as the chief year of the subsequent depression. Occasionally, however, reference will be made to 1913, the last complete year prior to the war and a year of good trade, though owing to substantial changes in the method of compiling the accounts as from 1st January, 1928, close comparison with 1913 is not possible.

Instead of confining attention to the four main line railways, it has been thought better here to consider the whole of the standard gauge railways of the country, omitting only the lines and services operated by the London Passenger Transport Board which on 1st July, 1933, took over the control of the greater part of the passenger transport work in and near the Metropolis. To do so gives, of course, the more complete view of the railway industry in this country. The Railways Act, 1921, did not bring all the standard gauge railways of the country into the four main line groups then formed. In 1936 there were forty-two such companies or lines worked by joint committees in receipt of revenue for the carriage of passengers or goods, or both, together with thirty-one other, non-working companies whose lines are

either leased to some other railway or are not being operated. Many of these seventy-three railways are technically light railways and most of them are of very restricted scope, such as the Liverpool Overhead, the North Sunderland, and the Trafford Park Railways. Nevertheless they are not negligible, and the work done by some of them is considerable, such as the Cheshire Lines Committee and the Midland and Great Northern Joint Committee, whose continued separate existence is due to the fact that the Act of 1921 caused the amalgamation of their main constituents into two separate groups.

With reference, therefore, to 1932 and 1929, what has been the experience of British railways in the past three years?

It will be seen from Table I that since 1932 and 1933 there has been a steady rise in the total receipts of the railways of Great Britain. The figures given are those in respect of railway working only, and do not include receipts from the ancillary undertakings of the companies, such as steamship services, canals, docks, harbours and wharves, road transport, hotels, refreshment rooms and cars, the collection and delivery of goods, or any other separate business. Compared with 1932 there was an increase in receipts of £8.1 million in 1935, of £14.4 million in 1936, and of £21.8 million in 1937, or 5.4, 9.6, and 14.6 per cent respectively. The recovery from 1932 has therefore been considerable. The financial result is seen to be still better if we consider the receipts in relation to the expenditure. It is, of course, well known that in the case of railways expenditure does not normally rise in proportion to an increase of traffic. But in recent years the companies in order to foster and expedite certain traffic have been forced to adopt expensive equipment and costly methods of operation. To offset these increased working costs, economies and improved methods of operation have been achieved in a number of other ways with the result that the total expenditure increased only by £2.2 million in 1935, £5.4 million in 1936, and £10.9 million in 1937; or 1.8, 4.3, and 8.7 per cent respectively. The net receipts have therefore increased by £5.9, £9.0, and £10.9 millions respectively in the three years, or 24.2, 36.9, and 44.7 per cent respectively.

Nevertheless, a comparison with 1929 shows the position to be

far less satisfactory. Thus compared with that year the total receipts were down by £24·2 millions in 1936 and £16·8 millions in 1937, and in spite of economies in operation the net receipts were lower by £7·9 and £6·0 million respectively than in 1929, the operating ratio (the percentage ratio of expenditure to receipts) rising from 78·08 to 79·62 in 1936 and 79·42 in 1937, whilst the interest per cent of capital receipts fell from 4·08 to 3·26 and 3·43 respectively. Still worse is a comparison with 1913 when the net receipts were in the neighbourhood of £44 million (with a much higher purchasing power of the pound sterling), and the operating ratio about 63.

In the lower part of Table I the main facts of the upper part are shown in the form of percentages of the year 1929. Taking the figures for 1937 we see that the total railway receipts were 8·9 per cent lower than in 1929, railway expenditure 7·3 per cent lower, net railway revenue 14·5 per cent lower, tonnage of merchandise and live stock 14·9 per cent lower, and the net ton-miles of merchandise 2·5 per cent lower than in 1929, whilst the estimated number of passenger-journeys was 2·1 per cent higher.

Having reviewed the general position, we may turn to a separate consideration of the passenger and the goods sides of railway working. In Table II are given the main statistics for both passenger train and goods train working. Approximately 45 per cent of traffic receipts accrue from passenger train traffic and 55 per cent from goods train traffic, the proportion having altered but slightly in the last twenty or thirty years, though there has been a slight tendency for the proportion due to passenger train traffic to decline. It will be seen, however, that passenger train traffic showed a rather quicker recovery than goods train traffic from the depression of 1932. In fact for all goods, except minerals and merchandise in classes 1-6 of the railway classification, 1933 was even worse than 1932. There was little change in parcels traffic, whilst the carriage of live stock definitely declined. It should be said, however, that in recent years parcels traffic has been less affected by a depression than other classes of traffic and consequently there was less ground to recover. In the case of live stock the numbers have been falling for some years. There

TABLE I
STANDARD GAUGE RAILWAYS OF GREAT BRITAIN
(Excluding those of the London Passenger Transport Board)

	1913 ¹	1929	1931	1932	1933	1935	1936	1937 ²
Total Railway Receipts (Million £)	119.8	188.2	163.1	149.6	149.6	157.7	164.0	171.4
Total Railway Expenditure (Million £)	75.7	146.9	132.6	125.2	123.1	127.4	130.6	136.1
Total Railway Net Receipts (Million £)	44.1	41.3	30.5	24.4	26.5	30.3	33.4	35.3
Railway Operating Ratio	63.2	78.08	81.29	83.68	82.28	80.79	79.62	79.42
Interest Per cent of Capital Receipts	⁴	4.08	3.16	2.59	2.76	3.08	3.26	3.43
Number of Passenger-journeys (Millions)	1549.8 ³	1,267.7	1,171.9	1,141.2	1,158.7	1,231.2	1,257.1	1,294.1
Tonnage of Merchandise and Live Stock (Million tons)	364.4	351.1	288.8	268.5	269.2	289.9	300.6	298.6
Net Ton-miles of Merchandise (Million miles)	⁴	18,845.9	16,313.5	14,933.5	15,017.9	16,402.2	17,429.9	18,384.0
<i>Index Numbers (1929 = 100)</i>								
Total Railway Receipts	—	100	86.7	79.5	79.5	83.8	87.1	91.1
Total Railway Expenditure	—	100	90.3	85.3	83.8	86.8	88.9	92.7
Total Railway Net Receipts	—	100	73.9	59.1	64.2	73.4	80.9	85.5
Number of Passenger-journeys	—	100	87.0	84.7	86.0	91.4	93.3	102.1
Tonnage of Merchandise and Live Stock	—	100	82.3	76.5	76.7	82.6	85.6	85.1
Net Ton-miles of Merchandise	—	100	86.5	79.2	79.7	87.0	92.4	97.5

¹ Substantial changes in the method of compiling the accounts as from 1st January, 1938, make a close comparison with 1913 impossible

² The figures for 1937 are provisional

³ This includes the London Tubes and Metropolitan District Railway, later absorbed in the London Passenger Transport Board

⁴ Not available

TABLE II
STANDARD GAUGE RAILWAYS OF GREAT BRITAIN
(Excluding the London Passenger Transport Board)

	1913 ¹	1929	1931	1932	1933	1935	1936	1937 ²
PASSENGER TRAIN TRAFFIC								
Receipts								
Ordinary Passengers (Million £)	38.8	49.7	42.8	39.9	40.2	42.5	41.3	46.8
Season Tickets (Million £)	4.8	9.0	8.3	8.0	7.8	7.9	8.0	8.1
Workmen's Tickets (Million £)	1.7	3.4	3.1	3.0	3.1	3.4	3.5	3.7
Total from Passengers (Million £)	45.2	62.1	54.2	50.9	51.1	53.8	52.8	58.6
Freight, etc., by Passenger Train (Million £)	8.2	13.9	13.1	12.3	12.5	12.5	12.5	12.7
Mails and Parcels (Million £)	1.1	4.0	4.0	3.9	3.8	3.8	3.9	3.9
Total Passenger Train Traffic (Million £)	54.5	80.0	71.3	67.1	67.4	70.0	72.2	75.2
Percentage Proportion of Total Railway Receipts	43.52	42.50	43.71	41.81	45.06	44.39	44.02	43.87
Average Receipt per Ordinary Passenger-journey (all classes) (s. d.)	0 11 34	1 7 02	1 5 66	1 4 77	1 4 32	1 4 19	1 4 61	1 5 04
Ordinary Passengers and Workmen (Millions)	1002.7	869.85	795.2	777.3	798.9	856.2	875.7	905.8
Season Ticket Holders (annual basis) (Millions)	0.550	0.663	0.628	0.606	0.600	0.625	0.636	0.649
GOODS TRAIN TRAFFIC								
Receipts								
Merchandise (excluding Classes 1-6) (Million £)	40.3	50.4	42.9	37.9	37.7	39.7	41.7	42.9
Minerals and Merchandise (Classes 1-6) (Million £)	22.7	16.7	12.8	10.7	11.7	13.4	14.2	13.1
Fuel, Coal, and Patent Fuel (Million £)	1.3	37.5	33.0	31.2	30.2	31.9	32.9	33.3
Live Stock (Million £)	61.3	1.9	1.6	1.4	1.3	1.3	1.4	1.3
Total Goods Train Traffic (Million £)	103.3	106.5	90.3	81.2	80.8	86.2	90.2	94.6
Average Receipt per Ton-mile (all Freight) (d.)	53.64	1.437	1.416	1.300	1.373	1.339	1.316	1.308
Percentage Proportion of Total Railway Receipts	56.58	55.35	54.24	54.24	54.00	54.68	55.03	55.20
Merchandise (excluding Classes 1-6) (Million tons)	133.8	57.0	47.6	42.5	42.5	45.3	48.3	50.3
Minerals and Merchandise (Classes 1-6) (Million tons)	225.6	64.9	47.1	39.9	43.1	50.7	54.9	58.6
Coal, Coke, and Patent Fuel (Million tons)	361.4	207.1	173.7	167.2	165.5	174.3	177.5	188.1
Total (Million tons)	721.8	529.0	468.5	450.6	471.1	520.3	560.7	607.0
Head of Live Stock (Millions)	19.5	17.7	13.7	12.3	11.1	10.4	10.6	9.2
MISCELLANEOUS								
Total (Million £)	1.0	1.8	1.5	1.4	1.4	1.5	1.6	1.6
Percentage Proportion of Total Railway Receipts	0.85	0.92	0.94	0.95	0.94	0.93	0.95	0.93

¹ Substantial changes in the method of compiling the accounts as from 1st January, 1926, makes a close comparison with 1913 impossible

² The figures for 1937 are provisional

were fewer in 1929 than in 1913 and it would appear that a good deal of this work has gone to the road carriers

It is perhaps surprising that with the increased movement from the towns to the suburbs and even farther afield the number of season ticket holders is still below the level of 1929. But the closing of a certain number of branch lines to passenger traffic and the great increase of bus services and of private motor car owners must have had an appreciable effect on this class of passenger.

In Table III the chief figures of Table II are shown as percentages of the corresponding figures for 1929. It will be noticed that in 1937 the receipts from ordinary passengers are 5·8 per cent lower and those from season ticket holders 10·0 per cent lower, while those in respect of workmen's tickets—a privilege ticket which evidence shows is being abused to the disadvantage of the railways—show 8·8 per cent increase. The total receipts from passengers were 5·6 per cent less in 1937 than in 1929. Passenger train traffic receipts as a whole show a fall of 6 per cent. The number of ordinary passengers and workmen shows an increase of 4·1 per cent, and the number of season ticket holders a fall of 2·1 per cent.

On the goods side, merchandise in the upper classes of the classification of goods bearing the higher tonnage rates has recovered less than minerals and merchandise in the six lower classes, or than coal, coke, and patent fuel, showing a percentage loss of 14·9 as against 9·6 and 5·9 per cent respectively for minerals, etc., and for coal, coke, and patent fuel. Receipts from the carriage of live stock are 31·6 per cent less in 1937 than in 1929, and those from all goods train traffic considered together are 11·2 per cent lower.

If, however, we consider the changes in the volume of traffic carried, we find that merchandise in the upper classes was 12·7 per cent less in 1937 than in 1929, minerals and merchandise in the six lowest classes 9·7 per cent less, coal, coke, and patent fuel 9·2 per cent less, and all goods traffic 9·9 per cent less.

We have seen that the total net receipts in respect of railway working of the standard gauge railways of Great Britain was £41·3 million in 1929, £24·4 million in 1932, and £30·3, £33·4,

TABLE III
STANDARD GAUGE RAILWAYS OF GREAT BRITAIN
(Excluding those of the London Passenger Transport Board)
Index Numbers (1929 = 100)

	1929	1931	1932	1933	1935	1936	1937
PASSENGER TRAIN TRAFFIC							
Receipts							
Ordinary Passengers	100	86.1	80.3	80.9	85.5	89.1	91.2
Season Tickets	100	92.2	88.9	86.7	87.8	88.9	90.0
Workmen's Tickets	100	91.2	88.2	91.2	100.0	102.0	108.8
Total from Passengers	100	87.3	82.0	82.3	86.6	89.9	94.4
Parcels, etc., by Passenger Train	100	94.3	88.5	90.0	90.0	90.0	91.4
Total Passenger Train Traffic	100	89.1	83.9	84.3	87.5	90.3	94.0
Numbers							
Ordinary Passengers and Workmen	100	91.4	89.4	91.8	98.4	100.6	104.1
Season Ticket Holders	100	94.7	91.4	90.5	94.3	95.9	97.9
GOODS TRAIN TRAFFIC							
Receipts							
Merchandise (excluding Classes 1-6)	100	85.1	75.2	74.8	78.8	82.8	85.1
Minerals and Merchandise (Classes 1-6)	100	78.7	94.1	70.1	80.2	85.0	90.4
Coal, Coke, and Patent Fuel	100	86.0	83.2	80.5	85.1	87.7	94.1
Live Stock	100	84.2	73.7	68.4	88.4	73.7	88.4
Total Goods Train Traffic	100	81.5	73.8	73.8	78.9	83.7	88.8
Wright							
Merchandise (excluding Classes 1-6)	100	83.7	73.8	73.8	78.9	83.7	88.8
Minerals and Merchandise (Classes 1-6)	100	73.6	61.5	66.4	78.1	83.0	90.3
Coal, Coke, and Patent Fuel	100	63.9	80.7	79.0	84.4	85.7	90.8
Total	100	81.4	75.7	76.2	82.2	85.2	90.1
Number							
Head of Live Stock	100	77.4	69.5	62.7	58.8	59.9	53.0

and £35·3 million in 1935, 1936, and 1937 respectively. Far the greater part of these sums represents the net receipts of the four main line companies, which in 1929 were £38 8 million; in 1932 £24·0 million, and £29·7, £32·7, and £34·4 million in 1935, 1936, and 1937.

On the passing of the Railways Act, 1921, a standard net revenue^a was fixed for each of the four companies. It was to be equal to the aggregate net revenues of the constituent and subsidiary companies of each group for the year 1913, together with interest at an adequate rate on three categories of capital expenditure specified in the Act. The rates and fares to be charged by each company were to be fixed by the Railway Rates Tribunal at such a level as in their opinion would yield with efficient and economical working and management by the company an annual net (railway) revenue equal to the standard net revenue so determined. In order to encourage the companies to take early steps to effect economies in working and management, both on amalgamation and afterwards, the Tribunal was authorized to make such an additional allowance to the standard net revenue in respect of these economies as they considered fair and equitable to an amount not exceeding 33½ per cent of the value of the economies. It is almost needless to say that the standard net revenue is not a guaranteed revenue. It is merely an objective in fixing charges.

It is well known that since the Act came into operation none of the four companies has in any year earned its standard net revenue. Consequently, the further provisions of the Act for sharing any surplus revenue between the companies and the traders by a lowering of charges have been inoperative.

The position for the year 1936 is shown in the table on p. 291 where the net revenue actually earned and the deficiency are shown as percentages of the standard net revenue and allowances for the year 1936.

In 1937 the net revenues of the companies considered together amounted only to 66·9 per cent of the standard net revenue considered reasonable by Parliament. Averaging the three years 1935, 1936, and 1937 their net revenues amounted only to 62·8 per cent of the standard revenue.

Railway Company	Standard Revenue and Allowances, 1937	NET REVENUE		DEFICIENCY	
		1937	Average of Years 1935-7	Year 1937	Average of Years 1935-7
L N E R	100	62.7	57.5	37.3	42.5
L M S R	100	66.3	63.2	33.7	36.8
G W R	100	74.6	67.8	25.4	32.2
S. R.	100	68.6	66.7	31.4	33.3
All Four Companies	100	66.9	62.8	33.1	37.2

The Act provided for periodical reviews of railway charges in relation to the net revenues earned, which were to be annual unless in any year the Minister of Transport deemed it unnecessary. This provision has been practically inoperative. The companies have been unwilling, at least until 1937, that the charges should be raised. They feared that any increase in either rates or fares would discourage or divert traffic and that the result would be a diminishing net revenue rather than an increased one, and they apparently considered that their present powers of charging gave them, under the economic conditions prevailing, the highest net revenue they could hope to obtain.

In fact, however, a very considerable proportion of the traffic, both of passenger and goods, has been carried at rates and fares well below the standard charges fixed by the Tribunal. Until the 1st October, 1937, the standard fares since the 1st January, 1928, have been 2½d. per mile first class and 1½d. per mile third class. On 1st May, 1933, the four companies introduced what were first called Summer tickets. They were return tickets, valid for one month, issued with few exceptions between all stations and available by any train on any day of the week. Third-class tickets were issued at 1½ times the single fare, which is equivalent to 1d. a mile for the double journey. First-class tickets were issued at 50 per cent more than the corresponding third-class fare. Though intended originally only for the summer months, they were so successful that the companies continued them throughout 1933 and subsequent years. Except for single

journeys and for return journeys beyond the period of a month, these monthly return, penny per mile, tickets have become the ordinary ticket of the railway passenger. But the companies have also steadily extended their programmes of reduced fares in the form of excursion tickets of various kinds and periods of validity. In fact wherever it was thought possible to induce people to travel who would not do so at the standard fare or that of the monthly return, or would travel by some other mode of transport, the companies have devised a reduced fare to meet them. In recent years these reduced fare facilities have been very extensive indeed and so fully made use of as almost to embarrass the companies who in some cases have had to devise special methods of handling the traffic. The extent to which these facilities have been used is clearly seen in an analysis of passenger fares, as follows—

	PASSENGER-JOURNEYS (Percentage of Total)			PASSENGER RECEIPTS (Percentage of Total)		
	1924	1935	1936	1924	1935	1936
Passengers other than Workmen and Season Ticket Holders—						
At reduced fares	35 03	85 99	86 23	34 47	84 61	84 86
At standard fares	64 97	14 01	13 77	65 59	15 39	15 14
Passengers of all Descriptions—						
At reduced fares or rates	67 86	92 84	93 01	46 81	87 88	88 05
At standard fares	32 14	7 16	6 99	53 19	12 12	11 95

In 1936, 86 per cent of all passengers, other than workmen and season ticket holders, were travelling at reduced fares and only 14 per cent were paying standard fares, as compared with 35 per cent and 65 per cent in 1924; whilst taking passengers of all descriptions 93 per cent in 1936 were travelling at reduced fares or rates and only 7 per cent at standard fares as compared with 68 per cent and 32 per cent in 1924.

The point may be put another way. According to special investigations in September, 1932 and 1934,¹ the average receipt per passenger mile, including first-class passengers, was 0·743d. in 1932 and 0·670d. in 1934, so that in the latter year the four main line companies were carrying passengers of all classes at an

¹ Corresponding figures for other years are not available

average fare of two-thirds of a penny per mile. To reduce the average fare to so low a figure as this, the numbers travelling at less than standard fares must be very large indeed.

On the goods side, too, a very large amount of traffic is carried by the railways at less than standard rates. Prior to the war it was estimated that there were about 80 million exceptional rates, that is, rates lower than the legal maxima, in the rate books of the constituent and subsidiary companies of the four main line railways. It was with the hope of reducing the number of these exceptional rates that the Rates Tribunal adopted a classification of goods divided into twenty-one classes, as compared with the eight classes of the Railway Rates and Charges Order Confirmation Acts of 1891 and 1892. It was considered that with twenty-one classes the difference in rates between adjacent classes would be so small that suitable classification of each commodity would avoid the necessity of granting an exceptional rate in large numbers of cases. But laudable as the intention was, the hope has been a vain one. Many of the former exceptional rates were, it is true, cancelled on the introduction of the standard charges and other provisions of the Railways Act, 1921. But a very large number, described by the Tribunal as many hundreds of thousands, had to be continued, and during the last ten years, owing to competition and other causes, approximately 1,500,000 additional exceptional rates have been introduced. These are not necessarily all in operation at the present time, since the number includes reductions of an exceptional rate previously existing and which is thereby cancelled. Others, too, are cancelled because they have not been used for a period of two years or more. But it is known that at least 80 per cent of the volume of goods traffic is at the present time being carried at less than standard rates. In 1936 the average receipts per ton-mile were 1·960d. for merchandise (other than classes 1-6) and livestock, 0·974d. for minerals and merchandise (classes 1-6), 1·029d. for coal, coke, and patent fuel, and 1·316d. for all freight taken together. In 1937 the receipts per ton-mile for all classes of freight had fallen to 1·308d. The corresponding figures for 1929 were 2·269d., 1·105d., 1·044d., and 1·437d., showing that the average receipts per ton-mile were distinctly lower in 1936 than in 1929.

The differences are an indication of the extent to which the companies have reduced goods rates by the grant of exceptional rates.

In July, 1937, a movement in the reverse direction was made by the companies. The Rates Tribunal granted the companies' application to increase almost all standard and exceptional rates and fares by 5 per cent of the existing charge, and these new charges have been operative since 1st October last.

But it is not alone in the matter of adjusting charges that the railway companies have been active in trying to surmount the difficulties with which they have been faced in the post-war years. They have made notable attempts in other ways than by a reduction of charges to increase the volume of traffic on their lines.

It has been, perhaps, a just complaint against the railways of this country in recent years that they were making insufficient efforts to increase the speed of their trains and especially of passenger trains. But in 1935 a definite step forward was taken in this matter by the construction by the London and North Eastern Railway of a streamlined steam train, the *Silver Jubilee*, and putting it into service once daily each day except Saturdays and Sundays between King's Cross and Newcastle-upon-Tyne. These trains do the journey of 268 miles in four hours, giving an average speed over-all of 67 miles an hour. On the trial runs a speed in excess of 100 miles an hour was maintained for over 25 miles, and a maximum of 112.5 m.p.h. was attained, which, though higher speeds have since been attained in Germany, was at the time a world's record for an ordinary steam train, and showed that the utility of the steam locomotive was by no means finished. During the trial run of the *Coronation Scot* (L.M.S.R.) between Euston and Glasgow in six hours and a half a maximum speed of 114 m.p.h. was accomplished, constituting a new record for British railways. Other companies had already increased the speed of certain trains, notably the Great Western Railway, with their *Cheltenham Flyer*. The success of these trains has led to a further extension of high-speed passenger trains and at the present time there are at least 107 trains running daily and covering over 11,000 miles at speeds of 60 miles an hour and over.

No other mode of transport, except air transport, can give such fast transport as this. In other ways, too, the railway companies have been increasing the convenience and comfort of passengers, and longer non-stop runs, such as those between King's Cross and Edinburgh (L.N.E.R., 392.7 miles), Euston and Carlisle (L.M.S.R., 301.1 miles), and Paddington and Devonport (G.W.R., 228.1 miles), have been introduced. Coaching stock has been improved both to give smoother running and more comfortable and tasteful furnishing. And happily this vast passenger traffic has been carried with a degree of safety which is in marked contrast with the death and accident rate on the roads.

Electrification of running lines has, perhaps, not proceeded as fast in this country as many people would deem desirable or necessary. The Committee on Main Line Railway Electrification in their report of March, 1931, while admitting that it was essential that the railways should examine new methods of reducing the costs of railway transport, pointed out that a comprehensive electrification of main line railways had not taken place in any country except Switzerland, though it was making steady progress in many parts of the world; but that the main reasons which had led to the adoption of electric haulage in foreign countries, broadly speaking, do not apply in this country. British electrification, hitherto confined to suburban lines, had produced favourable results, chiefly due to the substantial increase in revenue which had followed on the much improved service rendered possible by electrification, conditions which do not necessarily obtain in the case of the main lines. Nevertheless, they estimated that provided a comprehensive and not a partial scheme was adopted, the return on the capital cost of electrification with existing traffic would be about 7 per cent. But unfortunately the capital cost is large, approximately £261 million.

Such a capital cost is prohibitive under present conditions, and until 1933 electrification schemes in this country had been virtually confined to suburban areas. But on 1st January, 1933, the Southern Railway inaugurated an electric service of trains between London, Brighton, and Worthing. It was the first stage in a large programme of electrification in their area and the first

main line to be electrified. The Southern Railway have the largest suburban electrified area in the world. Since 1933, they have equipped for electric traction the main lines to Eastbourne, Seaford, Hastings, and Portsmouth, with a capital expenditure of about £4½ million. They claim that although the number of train miles has been doubled, the operating expenses have not appreciably increased. Receipts have risen by about £640,000 a year, representing a return of about 14 per cent on the capital expenditure.

North of the Thames, electrification, even in suburban areas, has made less progress. There is considerable goods traffic passing over these lines from the North and the problem is thereby rendered more difficult than in an area where the goods traffic is light. Nor could it well be undertaken in the absence of a pool of competing interests or without government assistance. The first difficulty was overcome by the formation of the London Passenger Transport Board and the creation of a pool of suburban passenger traffic between the Board and the four main line companies under the London Passenger Transport (Agreement) Act, 1935, the second by the Railways (Agreement) Act, 1935, under which a loan of £32,000,000, guaranteed by the Government as to principal and interest, has been issued, repayable within a period of fifteen to twenty years. Schemes have now been undertaken which it is hoped to complete in the course of the next three or four years. These schemes and their future extension come within the consideration of the Standing Joint Committee of the Board and the Companies, which was set up by the London Passenger Transport Act, 1933.

Sections of line have been electrified in the Liverpool and Manchester areas, and extensions made in the Newcastle-upon-Tyne area. A considerable step forward has, however, been taken by the London and North Eastern Railway in their decision to electrify that portion of their main line between Manchester and Sheffield, where the conditions are specially suitable for electric traction.

In 1930 there were 356 miles of track equipped for electric traction. By the end of 1936 this had increased to 770 miles (equivalent to 1989 miles of single track), of which the Southern

Railway had 449 miles, the London Passenger Transport Board 124 miles, the London, Midland, and Scottish Railway 112 miles, the London and North Eastern Railway, which on its Newcastle, Tynemouth, Monkseaton section was one of the pioneers of electric traction in this country, 39 miles, the Great Western Railway 7 miles, and other companies 36 miles.

On the goods side an earnest effort has been made to reduce the transit time of consignments on the railways. The railways were in fact somewhat slow to realize that in many cases road transport was speedier than rail. The last few years have, however, seen a considerable speeding up of goods traffic. Faster trains with wagons fitted with automatic brakes have been introduced, measures have been adopted to keep urgent consignments out of tranship sheds and marshalling yards by giving a more direct transit to destination, and the companies have made use of the powers given them by their Road Transport Act, 1928, to adopt motor haulage by road, not only for a wider range of collection and delivery of rail-borne traffic but also for those journeys which can be more quickly done by road. Already in the co-ordination of rail and road transport they have achieved in the last few years a very considerable measure of adaptability to the new conditions in the field of transport. These measures have, at least, greatly diminished the drift of the traffic to road transport, both on the passenger side and on the goods side, and if, as seems to-day likely, the congestion of vehicles on the roads is to become greater still, it is possible that the railways have seen their worst days, and that a return at least to the position of 1929 is possible.

REFERENCES

The following are the chief sources of information concerning the railways of this country—

A. STATISTICAL

- (i) The Annual Railway Returns and Report of the Ministry of Transport (published about July each year).
- (ii) Railway Statistics (published monthly by the Ministry of Transport).
- (iii) The Directors' Reports of the different railway companies (published to shareholders about February each year).

B. GENERAL

The Railway Gazette (published weekly).

Modern Transport (published weekly)

The Journal of the Institute of Transport (nine monthly numbers published each year).

Railway Year Book (Directory Publishing Company, 33 Tothill Street, Westminster)

THE MOTOR INDUSTRY

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SOCIETY OF MOTOR MANUFACTURERS AND TRADERS LTD.

THE MOTOR INDUSTRY

THE motor industry, although young in relation to the other great industries of this country, is to-day so much an integral part of our lives, both domestic and business, that its existence is accepted without question and without full recognition of the change it has made in our method of living. The development of the motor industry to its present extent has caused a redistribution of the population by enabling the family to be spread over a much wider area, without sacrificing the amenities considered necessary for comfort. The evolution is in contradistinction to that produced by the railways, which led the population to group itself in the large cities. It is almost impossible to realize the drastic upheaval which would occur should the present-day community be suddenly deprived of the use of the motor vehicle. It will therefore be appreciated that the progress and development of the industry, present and future, should be the concern of every member of the population.

VEHICLES IN USE

The growth of the industry can be fairly easily traced from 1904, when there were about 18,000 mechanically-propelled vehicles on the roads. Prior to this date, the position is rather obscure and the taxation of carriages was largely a matter of local import. The following table traces the growth in the number of vehicles on the road from 1904 to 1937. It will be noted that until 1920 the figure for goods vehicles is estimated, as, apart from the petrol tax, first instituted in April, 1909, goods vehicles paid no tax. It is interesting to note that commercial vehicles were burdened with only 50 per cent of the petrol tax rate; the difficulties that arose from having this 50 per cent allowance for commercials was one of the reasons that brought about the present system of direct taxation, which was first instituted in 1920.

MOTOR VEHICLES IN USE IN THE UNITED KINGDOM

	Private Cars	Trucks	Hackneys	Exempt Vehicles ¹	Tractors (Agric and Gen Haulage) ²	Total Vehicles	Motor Cycles
March 31							
1904	8,465	4,000	5,345	—	—	17,810	—
1905	15,895	9,000	7,491	—	—	32,386	—
1906	23,192	12,000	9,828	—	—	45,020	—
1907	32,451	14,000	12,398	—	—	58,849	34,664
1908	40,902	18,000	14,666	—	—	73,568	35,247
1909	48,109	22,000	16,310	—	—	86,119	35,784
1910	53,169	30,000	24,466	—	—	107,635	36,242
1911	72,106	40,000	33,199	—	—	145,305	47,572
1912	88,265	52,600	34,860	—	—	175,731	69,501
1913	105,734	63,600	38,544	—	—	207,878	97,784
1914	132,015	82,000	51,167	—	—	265,182	123,678
1915	139,245	84,600	44,180	—	—	268,325	138,496
1916	141,621	82,100	51,293	—	—	275,011	152,960
1917	110,435	64,100	47,781	—	—	222,316	118,806
1918	77,707	40,700	41,815	—	—	160,222	69,206
1919	109,715	62,000	44,081	—	—	215,796	114,722
1920	186,801	101,000	74,608	—	—	362,109	287,739
Highest Qr							
1921	245,882	134,519	98,107	10,034	1316	492,888	378,338
1922	310,311	161,008	79,738	11,954	3812	575,823	384,360
1923	389,767	183,895	88,747	13,985	3762	680,156	437,997
1924	482,356	213,137	97,489	15,261	3701	811,947	504,367
1925	590,156	236,038	102,674	17,032	3497	949,397	581,228
Census Sept							
1926	695,634	261,697	104,634	17,276	3689	1,082,930	646,295
1927	800,112	288,015	98,823	18,171	4807	1,209,928	690,675
1928	900,557	311,410	97,366	20,144	3275	1,332,752	721,402
1929	998,489	336,122	99,645	22,252	3224	1,459,732	739,567
1930	1,075,081	354,948	102,791	24,154	3295	1,560,269	732,698
1931	1,103,715	367,452	89,182	24,741	2982	1,588,075	633,249
1932	1,149,231	377,145	86,743	26,663	2793	1,642,575	606,113
1933	1,226,541	394,770	86,805	28,168	2688	1,738,972	568,093
1934	1,333,500	420,799	86,900	30,017	2707	1,874,013	553,458
1935	1,505,019	442,187	87,383	33,057	3069	2,070,715	521,128
1936	1,675,104	467,561	87,820	38,562	2820	2,271,867	510,242
1937	1,834,248	487,750	87,474	49,446	2915	2,461,833	491,718

¹ Includes Government motor cycles² Excludes 55 class

There are thus to-day practically 3,000,000 mechanically-propelled vehicles operating in the United Kingdom, equal to about 64 vehicles per 1000 head of the population.

Until the war period, the United Kingdom motor industry showed a rapid progress, but the war then gave the U.S.A. its great opportunity and the home industry did not get into its stride again until 1924. The return of the vehicles from the war area, and the resulting building up of the Slough Depot with war stores for sale, accounted very largely for the increases between 1920 and 1924 in the numbers of vehicles in use.

The general strike of 1926 showed the public the important part that an efficient transport service was playing in their lives.

Following the crisis, the question of transport co-ordination was very much to the fore, and quite apart from the Royal Commission on Transport there were numerous meetings between the road and rail interests. At this point, it might be as well to mention that although there have been many arguments and suggestions put forward for co-ordination, the unanimous opinion of the motor industry is that efficient progress and service to the community depends upon its freedom from monopoly, especially as co-ordination is merely another name for making the mechanically-propelled road vehicle subsidize other forms of transport.

PRODUCTION

From the end of 1923 until 1929 motor manufacturers made substantial progress. It was not until 1930 that there was any halt. Manufacturers have not been accustomed to return the result of their factory production, so that this information has to be computed from sales on the home market, less imports, plus exports, the latter items being suitably staggered; although the result does not make any allowance for stocks, it is thought that in normal conditions and over a period, these would tend to cancel out.

The table on p. 304 shows the output of United Kingdom motor vehicles (private and commercial) from 1908 to 1937. The index of production columns are based on 1924 = 100. It is not possible to overcome the difficulty arising from vehicles built from "parts" imported, but the latter point is not considered of great importance in recent years in relation to total production.

From the facts available, it would appear as though the first stage of the depression was felt by the motor industry about September, 1929, and that recovery in production took place between 1931 and 1932. It is probable that June and July, 1932, were the real turning points, from which months the industry continued to expand right up to September, 1937. The composite chart on page 305 illustrates the growth in production from 1923 to date. For practical purposes, the production year of the industry comprises the twelve months ended 30th September of each year. In most factories September is used for the

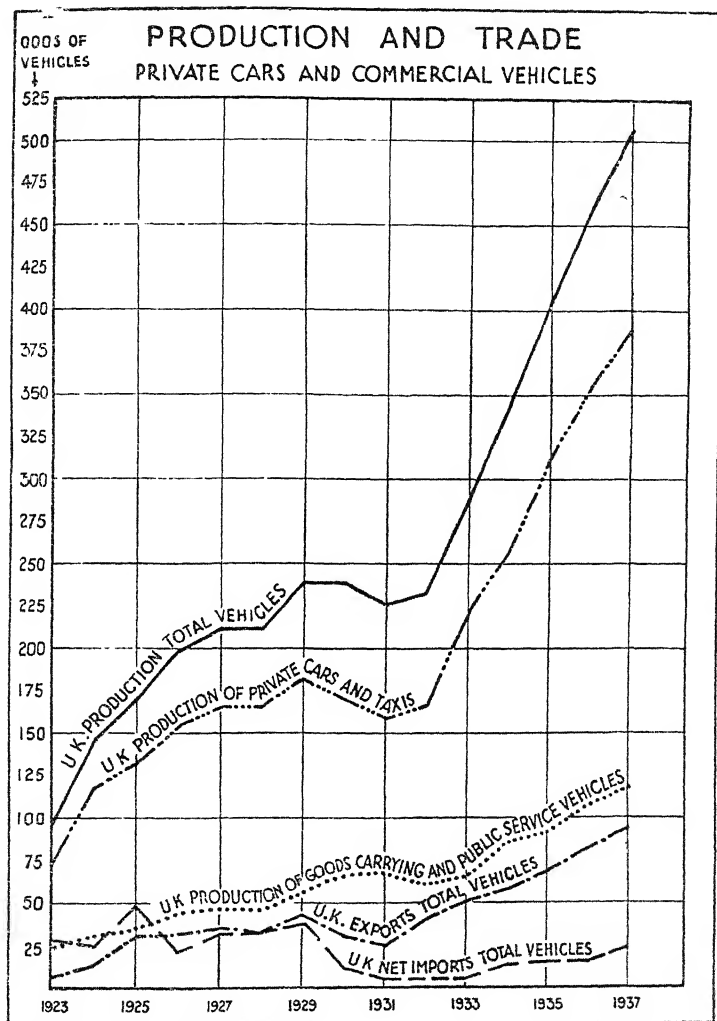
PRODUCTION OF MOTOR VEHICLES IN THE UNITED KINGDOM

Year	Private Cars and Taxis Number	Index of Production	Com. Vehicles including Omnibuses Number	Index of Production	Total of Vehicles Number	Index of Production
1908	—	—	—	—	10,500	7
1909	—	—	—	—	11,000	8
1910	—	—	—	—	14,000	10
1911	—	—	—	—	19,000	13
1912	—	—	—	—	23,200	16
1913	—	—	—	—	34,000	23
1922	—	—	—	—	73,000	50
1923	71,396	61	23,604	79	95,000	65
1924	116,600	100	30,000	100	146,600	100
1925	132,000	113	35,000	117	167,000	114
1926	153,500	132	44,500	148	198,000	135
1927 ¹	164,553	141	47,227	157	211,780	144
1928	165,352	142	46,525	155	211,877	145
1929	182,347	156	56,458	188	238,805	163
1930	169,669	146	66,859	223	236,528	161
1931	158,997	136	67,310	224	226,307	154
1932	171,244	147	61,475	205	232,719	159
1933	220,779	189	65,508	218	286,287	195
1934	256,866	220	85,633	285	342,499	234
1935	311,544	267	92,176	307	403,720	275
1936	353,838	303	107,609	359	461,447	315
1937	389,633	334	118,116	394	507,749	346

production of models to be sold as from the period of the annual Motor Show, which takes place in October.

A further advantage of the September year is that it links up very closely with the Ministry of Transport's Census of Mechanically-propelled Vehicles. The production of vehicles by classes, compiled according to horse-power, unladen weight or seating capacity, is unknown, but as the United Kingdom producers to-day hold such a large share of the home market, at least 94 per cent, it can safely be assumed that home sales, or new registrations as they are generally called, will reflect fairly closely the proportion of each taxation class that is produced. In this connection, however, it must be borne in mind that the assessment of the higher horse-power categories of private cars presents a difficulty, as they are affected by the imports from U.S.A. and Canada, all of which are of 17 h.p. and over.

¹ Year ended September from 1927 onwards.



IMPORTS

In the past, imported vehicles played an important part in the growth in motor vehicle usage, and it may be that the economic depression of 1930 was a blessing in disguise, as, in that year, total vehicle imports dropped from 37,784 to 11,278; by 1932

imports had further declined to only 3,072, of which 310 were commercial vehicles.

The table on p 307 shows the United Kingdom net imports of vehicles from 1929 to date

The fluctuations in the numbers of vehicles imported from 1923 to date will be seen in the chart on page 305

One of the significant features of imports is that whereas the average values of complete private cars have, with the exception of 1931 and 1937 (this latter year being affected by large numbers of low horse-power private cars from Germany and Italy) fluctuated only about £25 either side of £180, in the case of commercial vehicles the average values show quite violent fluctuations. It will also be appreciated that owing to the requirements of industry, in all its many spheres, the majority of goods vehicles, buses, and coaches imported are chassis, the purchasers having bodies built to their own particular requirements.

The motor industry receives protection from import duties. The first duty was imposed on all vehicles in September, 1915, at 33½ per cent *ad valorem*. This duty was repealed in August, 1924, but was re-established in July, 1925, for private cars and in March, 1936, for commercial vehicles.

EXPORTS

There can be little doubt that the foregoing duties and the method of taxation have had some considerable effect in retaining their own domestic market for the United Kingdom producers. Taxation in particular, being very high, has brought about the production in the United Kingdom of a vehicle of a size and efficiency which is the most economical to run of any produced in the world. This typical British product undoubtedly shows great advantages for the home market, but is unfortunately not appreciated as so suitable for overseas conditions.

It cannot be denied that the motor industry has played a very large part in the economic recovery of Great Britain. In 1932 its exports of vehicles were only 1,843 below the previous peak year of 1929. The table on p. 308 shows the number and value of exports of vehicles from 1928 to date. It will be noted that as

UNITED KINGDOM NET IMPORTS OF MOTOR VEHICLES

	PRIVATE CARS				COMMERCIAL VEHICLES				Grand Total		Indices Percent- age Total Nos. (1924 = 100)
	Complete		Chassis		Complete		Chassis				
	No.	£	Average Value £	No.	£	No.	£	Average Value £	No.	£	
1929	11,410	2,138,315	187.3	10,104	1,010,152	48	17,227	358.9	37,784	1,273,359	159.1
1930	9,936	1,210,091	178.9	2,815	316,696	37	10,919	538.4	11,278	1,837,329	177.5
1931	12,733	3,277,717	265.4	883	140,073	50	11,851	237.2	14,499	683,227	157.2
1932	2,263	438,439	202.6	499	67,369	13	3,411	262.4	2,571	40,121	129.9
1933	2,997	578,362	194.9	622	85,322	29	6,817	233.1	3,072	578,331	169.9
1934	10,155	1,584,911	156.0	696	84,936	61	15,897	264.7	1,019	721,838	169.9
1935	12,354	1,561,818	160.3	1,212	129,671	63	12,111	207.9	1,574	181,372	326.6
1936	12,368	2,069,865	183.8	773	34,027	203	12,310	82.4	1,778	229,614	64.9
1937	17,851	2,358,232	153.8	799	93,432	626	42,273	69.8	2,495	275,457	62.5
									4,051	451,327	97.8

UNITED KINGDOM EXPORTS OF MOTOR VEHICLES ¹

	PRIVATE CARS				COMMERCIAL VEHICLES				TOTAL		Average Value of all Vehicles	
	Complete		Chassis		Complete		Chassis					
	No	£	No	£	No	£	No	£	No	£		
1928	18,192	3,620,090	7,988	955,264	1437	751,727	4,923	1,366,351	32,540	6,693,432	£	205.7
1929	23,891	4,390,573	9,901	1,085,649	2636	1,017,593	5,583	1,943,395	42,021	8,437,120	200.8	
1930	19,226	3,373,255	3,983	536,203	3486	1,611,958	3,059	1,099,656	29,754	6,621,132	222.5	
1931	17,104	2,644,409	1,888	297,670	2024	751,692	3,296	764,082	24,312	4,457,853	183.4	
1932	26,942	3,445,626	4,855	488,985	2016	518,255	6,365	993,620	40,178	5,446,486	135.6	
1933	33,802	4,364,162	7,226	713,339	2290	557,810	8,374	1,105,273	51,692	6,740,584	130.4	
1934	34,877	4,855,099	9,030	820,562	2367	652,805	11,375	1,671,391	57,649	7,999,857	138.8	
1935	44,193	5,488,583	10,327	880,202	2251	789,560	11,434	1,765,819	68,205	8,924,254	130.8	
1936	51,173	5,811,885	13,592	1,078,736	3378	967,372	13,545	2,178,081	81,688	10,036,074	122.9	
1937	53,655	6,421,164	24,458	1,903,924	3816	1,039,308	16,620	2,770,912	98,549	12,155,308	123.3	

¹ Excluding second-hand vehicles from 1934 inclusive.

with imports most of the commercial vehicles exported are chassis.

A perusal of the above table and the chart on page 305 will show quite clearly the strides that have been made in the supply of United Kingdom manufactured vehicles to overseas markets.

The development of the small private car to suit the home taxation level does mean, however, that a very serious problem, as referred to above, presents itself. As readers will be aware, the U.S.A. producers dominate the world motor market and have established not only in their own domestic market, but in other countries, the demand for a large car of about 25 h.p. weighing in the neighbourhood of 25 to 35 cwt. The United Kingdom producer is therefore left with a domestic demand for a small car and an export demand for a large low-priced car in many of the most important of the world's markets. There can be little doubt that if in 1932 and 1933 we could have met the general demand for a larger car, the United Kingdom producers would now predominate in the export market. With domestic taxation at so high a level, however, the problem could only be partially solved and no little credit can be given to the United Kingdom producers for the magnificent efforts they made, despite the almost insurmountable handicaps.

RAW MATERIALS

Few people realize the real ramifications of the motor industry—there is no other industry today, except perhaps shipbuilding, which consumes so wide a diversity of raw materials and basic products. Nor must one forget that the movement of the various materials from source to consumer provides an income to every class of transport not excluding the repair, upkeep, and building of our highways, the materials for which are not included in the table which follows. No official data are available giving either the quantity consumed by the motor industry or the proportion it bears to the total consumption of the country. From certain known facts, however, some idea of the total consumption of the chief raw materials can be computed. The basic information available is (1) the number of vehicles produced and in use, (2) their average size and value, and (3) the comparability of United

RAW MATERIALS CONSUMED IN THE MANUFACTURE AND REPAIR OF
MOTOR VEHICLES IN THE UNITED KINGDOM, 1937

	Sub-totals	Quantity and Unit
Iron and Steel		1,000,000 tons
Non-ferrous Metals		
Brass and Copper	15,000	
Lead and Lead Oxide	9,000	
Zinc Alloys	1,800	
Tin	1,650	
Aluminium and Bronze	500	27,950 tons
Trimmings		
Primary Leather and Cloth	10,400,000	
Secondary, Headlinings, etc	9,600,000	20,000,000 sq yd.
Glass		
Windscreens	1,830,000	
Bodylights	7,260,000	
Other	620,000	9,710,000 sq ft
Paints		5,500 tons
Body Finishes	1,510,000	
Parts and Accessories	900,000	
Maintenance Factory	200,000	2,010,000 gallons
Rubber		11,400 tons
Tyres	63,300	
Other	6,250	69,550 tons
Tyres.		
(ex Rubber) Cotton	3,700	
Wire	3,700	
Other Constituents	45,000	52,400 tons
Plastics.		
Phenolic and Filler	1,500	
Urea	200	
Muckites	2,500	4,200 tons
Fibre		2,500 tons
Felts		1,200 tons
Asbestos		300 tons
Porcelain and Mica		350 tons
Anti-freeze Chemicals		60 tons
Timber, Hard and Soft Woods		115,000,000 board ft
Petrol	1,422,000,000	
Oil for Propulsion	70,000,000	
Oil for Lubricating	35,500,000	1,527,500,000 gallons
		6,010,000 tons

Kingdom production and production methods to other countries where raw material consumption is a known factor. It should be noted that the term raw material is used in the sense that the finished product of one industry may form the raw material of the next

EMPLOYMENT AND WAGES

The consumption of these raw materials, and in the case of rubber, chemicals, oils, etc., their transport from overseas, forms an important part in the provision of employment in many spheres. Direct production accounts for approximately 300,000 employees, and operation, repair, and maintenance for a further 1,000,000, which includes drivers and conductors of passenger vehicles, and drivers and attendants of goods vehicles. In general, the wages paid are high, especially for vehicle production, and the following tables show the numbers employed from 1924 to 1937 and the average earnings from 1914 to 1937

EMPLOYMENT IN CONSTRUCTION AND REPAIR OF MOTOR VEHICLES, CYCLES, AND AIRCRAFT

As at	Nos OF WORKPEOPLE		Total Employed Col. (1) — Col (2)	Indices of Employed (1924 = 100)
	Covered by Act (1)	Unemployed (2)		
July, 1924	203,340	13,618	189,722	100.0
„ 1925	214,840	12,132	202,708	106.8
„ 1926	224,040	21,609	202,431	106.7
„ 1927	230,130	18,339	211,791	111.6
„ 1928	234,830	22,015	212,815	112.2
„ 1929	245,410	17,614	227,796	120.1
„ 1930	247,140	40,626	206,514	108.9
„ 1931	251,320	57,462	193,858	102.2
„ 1932	252,080	55,779	196,301	103.5
„ 1933	261,720	44,168	217,552	114.6
„ 1934	271,530	28,819	242,711	127.9
„ 1935	285,830	26,538	259,292	136.7
„ 1936	314,000	19,705	294,295	155.1
„ 1937	351,630	17,014	334,616	176.4

From the above table, cols. (2) and (4), it will be seen that although unemployment shows an increase since 1924, the

estimated number of people employed in the industry has increased by 76·4 per cent

The following table gives the estimated average earnings on a sample basis of all adult male workers in the motor industry

AVERAGE EARNINGS OF SKILLED AND UNSKILLED MEN

Year	Average Earnings	Index of Average Earnings* (1924 = 100)
	<i>s</i> <i>d</i>	
1914	40 10½ per week	54 6
1924	74 10 " "	100 0
1925	74 6½ " "	99 6
1926	76 3½ " "	101 9
1927	80 3 " "	107 2
1928	77 3½ " "	103 3
1929 (October)	79 9 " "	106 6
1930 (October)	72 7½ " "	97 0
1931 (October)	68 11 " "	92 1
1932 (October)	73 7½ " "	98 5
1933 (October)	77 6 " "	103 6
1934 (October)	79 4¾ " "	106 1
1935 (October)	80 7¼ " "	107 8
1936 (October)	84 3½ " "	112 6
1937 (October)	81 2 " "	108 5

From the foregoing data, it will be obvious that since 1932 the motor industry has ranked very near the top, not only as an employer of labour, but also because it provides in the form of annual tax and duties practically one-eleventh of the total revenue of the United Kingdom.

TAXATION AND HIGHWAYS

The taxation of motor vehicles can be divided under two heads : (1) Direct Taxation and (2) Other Contributions to National Revenue. The former produces over £34,000,000 a year and the latter over £46,000,000.

The table which follows gives the major proportion of road vehicle contribution to the various classes of revenue. The revenue from direct taxation, shown in column (1), is paid into the Road Fund, and provides the money required from motor vehicle users for the purpose of the upkeep, improvement, and construction of roads. Of this sum, however, the Exchequer has since 1926 retained one-third of the taxation revenue produced by

private cars and motor cycles. The amounts in column (2) are the estimated share paid by the motor industry in Fuel Tax, the total figure for 1938 being £50,143,000, thus only £5,300,000 was raised by other sources from the petroleum duties

REVENUE FROM ROAD VEHICLES

(000's omitted except col 6)

Year ending March	Net Direct Taxation	Net Fuel Tax Receipts	Net Import Duties	Total Cols (1) to (3)	No of Vehicles (See Note) ²	Average Amount of Local Rate per Vehicle	Minimum Local Rate Receipts from Garage Space	Total Payments Cols (4) and (7)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
1910	£ 800 ¹	£ 321	£ —	£ 1,121	120	£ 2.40	£ 288	£ 1,409
1911	915	440	—	1,355	145	2.40	348	1,703
1912	869	624	—	1,493	176	2.10	422	1,915
1913	960	739	—	1,699	208	2.40	499	2,198
1914	1,000	841	—	1,931	265	2.45	619	2,550
1915	1,085	965	—	2,050	268	2.50	670	2,720
1916	1,076	1,793	541	3,410	275	2.55	701	4,111
1917	844	1,976	214	3,034	222	2.45	514	3,578
1918	616	1,699	120	2,435	160	2.55	402	2,837
1919	829	2,222	191	3,242	216	2.85	616	3,858
1920	1,417	3,001	1,096	6,414	362	3.50	1,267	7,681
1921	7,775	2,550	4,050	14,375	411 ¹	4.95	2,031	16,406
1922	11,051	— 169	761	11,643	461	1.00	2,282	13,925
1923	12,584	—	1,271	13,855	562	1.85	2,720	16,575
1924	14,628	—	1,436	16,064	654	1.45	2,910	18,974
1925	16,485	—	107	16,592	782	1.30	3,393	19,985
1926	18,456	—	661	19,117	914	1.10	4,022	23,139
1927	21,529	—	1,834	23,363	1048	1.55	4,766	28,129
1928	24,737	—	2,549	27,286	1170	4.75	5,588	32,874
1929	25,535	12,600 ³	2,470	40,605	1289	4.55	5,805	46,410
1930	26,598	14,600 ³	2,406	43,604	1412	4.25	6,001	49,605
1931	27,825	15,400 ³	1,328	44,553	1502	1.25	6,411	50,964
1932	27,340	28,400 ³	887	56,627	1514	4.10	6,280	62,907
1933	27,010	34,200 ³	707	62,817	1586	4.00	6,311	69,128
1934	30,712	35,400 ³	686	66,798	1678	4.00	6,712	73,510
1935	31,538	37,900 ³	1,082	70,520	1810	4.00	7,240	77,760
1936	30,752	40,780 ³	1,437	72,969	2001	4.00	8,001	80,970
1937	32,727	43,200 ³	1,512	77,439	2190	1.60	8,790	86,229
1938	34,668	44,800 ³	1,688	81,096	2366	1.00	9,161	90,257
TOTAL	433,291	321,291	29,957	785,539	—	—	105,167	892,706

¹ Estimated figures.² Number of Goods-carrying Vehicles included is estimated for 1910-21.³ Estimated share paid by Motor Industry.

The actual expenditure on highways and bridges and the sources of revenue are given on p. 314. It will be seen from column (8) that out of a net expenditure of £44,385,000 in 1935-6 only £11,850,000 came from the Road Fund Grants and £31,740,000 from local rates. It must be appreciated, however, that motorists are also ratepayers and local authorities receive at least £9,500,000 from garage space alone, so that a considerable proportion of the

sum granted from the Local Authorities Rate Revenue is provided by motorists

EXPENDITURE ON HIGHWAYS AND BRIDGES IN GREAT BRITAIN FOR
YEAR ENDED MARCH, 1934, 1935, AND 1936

Heads of Expenditure in £000

Expenditure Charged Against	Year	Maintenance and Repair	Major Improvements	New Con- struction	Cleansing, etc	Administra- tion	Recoverable, not Previously Included	Total	Loan Charges
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Rate Fund	31-34	21,037	1291	161	4262	2764	Cr 2	30,433	8115
	34-35	21,967	1529	79	4220	2912	Cr 17	30,690	8575
	35-36	22,198	1781	73	4562	3108	Cr 2	31,740	8218
Road Fund	33-34	7,878	1918	1863	—	382	—	12,042	326
Grants	34-35	8,171	2050	1258	1	370	—	11,850	247
	35-36	8,324	2826	943	10	412	—	12,516	207
Other Govern- ment Grants	33-34	81	15	2	1	13	—	112	522
	34-35	82	13	6	—	17	—	118	419
	35-36	78	16	17	1	16	1	129	405
Total Net Ex- penditure	33-34	29,896	3224	2026	4283	3159	Cr 1	42,587	9293
	34-35	30,220	3592	1343	4221	3299	Cr 17	42,658	9271
	35-36	30,600	4623	1033	4593	3536	—	44,385	8860
Public Utility and Frontagers	33-34	962	217	101	82	186	2898	4,536	294
	34-35	990	279	148	95	190	3162	4,864	308
	35-36	934	297	223	77	218	3214	4,963	339
Loans Raised or to be Raised	33-34	558	2016	920	13	47	79	3,633	9
	34-35	659	2306	838	—	59	117	3,979	45
	35-36	584	3057	862	11	41	246	5,401	21
Total Gross Ex- penditure	33-34	31,416	5457	3137	4378	3392	2976	50,756	9596
	34-35	31,869	6177	2329	4316	3548	3262	51,501	8624
	35-36	32,118	8577	2118	4681	3795	3460	54,749	9220

There are two main aspects of road finance. (a) the total annual expenditure, and (b) the annual cost of roads

Dealing firstly with (a) it will be seen that a net and gross figure is given, this latter includes expenditure which is recoverable from the Public Utility Companies (gas, electricity, etc), and from householders.

With regard to (b) a few further adjustments are necessary before arriving at the annual net cost. This net cost may be defined as the expenditure, including charges on loans raised in previous years but excluding new expenditure out of loans or such recoverable expenditure as that relating to frontagers or public utility companies. Thus for 1935-6 the net cost is made up from column (8) plus column (9) less column (7).

The mileage of roads in Great Britain shows little change since

1909, although actually the increase may be a little greater than is at first apparent, due to the fact that in 1931 and 1932 certain discrepancies were discovered, which decreased the recorded mileage by at least 2,500 miles, and it must be assumed therefore that figures for previous years are at least this amount too high. The following table shows the mileage of roads and a column has been added to show the number of vehicles per mile—

Year	Class 1 ¹	Class 2 ¹	Unclassified	Total for Great Britain	Vehicles per Mile ³
1909	—	—	—	175,463	0.8
1924	23,230	14,739	139,352	177,321	7.5
1925	24,048	14,638	138,996	177,682	8.7
1926	24,328	14,930	138,947	178,205	9.7
1927	24,552	15,625	138,185	178,361	10.7
1928	25,112	15,683	137,942	178,737	11.5
1929	25,528	15,747	137,820	179,095	12.3
1930	25,996	15,805	137,485	179,286	12.8
1931 ²	26,417	15,924	134,915	177,256	12.5
1932 ²	26,513	16,482	133,796	176,791	12.
1933	26,585	16,644	134,118	177,347	13.0
1934	26,663	16,774	134,385	177,822	13.6
1935	26,779	16,837	134,891	178,507	14.5
1936	27,015	16,855	134,233	178,103	15.6
1937	27,142	16,930	134,832	178,904	16.4

LEGISLATION

Since the economic depression there has been much important legislation relating to motor vehicles.

First, in 1930 there was the Road Traffic Act. This brought into being four main changes—

- (1) Compulsory third party insurance.
- (2) Regulations of drivers' hours
- (3) Control of public service vehicles
- (4) Abolition of the speed limit for private cars

¹ The terms Class 1 and Class 2 roads are frequently misunderstood and it is therefore pointed out that this classification has nothing directly to do with the surface or width, but only indicates those roads which it is estimated bear the bulk of the traffic, within the mileage of unclassified roads are included most of the residential streets in towns and urban areas.

² Discrepancies in mileages discovered during the transfer of highway functions, under provisions of Local Government Act, 1924.

³ Includes all mechanically-propelled vehicles

Third party insurance, necessary as it probably was, nevertheless placed a further heavy burden on the motorist, who was already very heavily taxed

The control of the public service vehicles also had a very drastic effect on the development of that section of the industry, the sales of vehicles for which are still very considerably below the level of 1929.

In 1933 there came the Road and Rail Traffic Act which divided the goods transport industry into two main classes: first, those carrying for hire or reward, and secondly, those carrying for themselves. The former category is divided into those holding two types of licences, "A" and "B," while the latter consists of "C" licence holders. The "A" licence holder has what is called a general trade licence and the "B" licence holder a limited trade licence. Applications have to be made to the appropriate authorities before either "A" or "B" licences can be granted. In the case of the ancillary user or "C" licence holder the licence for the vehicle is granted automatically.

The introduction of the Bill caused a sudden jump in the number of goods vehicles sold, as firms were anxious that they should not be too restricted just after a depression as to the tonnage of goods vehicles likely to be required to cope with the trade recovery

The main impact of the Act was on the "A" and "B" classes of operators, i.e. those carrying goods for hire or reward and was definitely restrictive in its effects, as operators could no longer buy new vehicles and be sure that they would receive a licence to operate. Operators for hire or reward own about one-third of the total goods vehicles and it is probable that these are generally of a higher average unladen weight than those classes owned and used by "C" operators. Very little is known as to the total tonnage, miles run, or hours worked by the goods carrying industry and efforts are still being made to persuade the Ministry of Transport to collate and publish the items returned by operators in the Records and Returns forms. The tables on p. 317 give first, brief details of carriers' licences, and secondly, certain basic figures which are frequently used when estimating probable vehicle operation.

CARRIERS' LICENCES

	"A" LICENCES		"B" LICENCES		"C" LICENCES		TOTAL	
	April, 1936	June, 1937	April, 1936	June, 1937	April, 1936	June, 1937	April, 1936	June, 1937
Number of Licence Holders	28,916	28,888	34,320	34,589	161,535	186,734	224,771	250,211
Number of Vehicles Authorized	91,567	91,101	53,061	53,775	324,233	362,380	468,861	507,256
Number of Vehicles per Licence Holder	3.17	3.15	1.55	1.55	2.01	1.94	2.08	2.03

VEHICLE OPERATION

Type of Vehicle	Estimated Average Class of Vehicle in Use		Estimated Average Class of New Registrations		Estimated Average Annual Mileage	Estimated Average Load per Journey
	1937	1936	1937	1936		
Private Cars	11.9 h.p.	12.0	11.8 h.p.	12.1	8,000	2 pass.
Hackneys, up to 8 seats	5.0 seats	5.1	4.1 seats	4.1	16,000	2 pass.
Hackneys, over 8 seats	34.9 seats	33.6	38.4 seats	36.5	33,100	11.5 pass.
Goods-carrying Vehicles	34.6 cwt.	35.2	32.9 cwt.	32.7	16,000	17 cwt.
	unladen		unladen			
Cycles	32.6 c.c.	32.7	31.8 c.c.	30.6	7,000	1 pass.
Trolley Buses	55.4 seats	52.8	63.0 seats	62.4	31,100	12 pass.

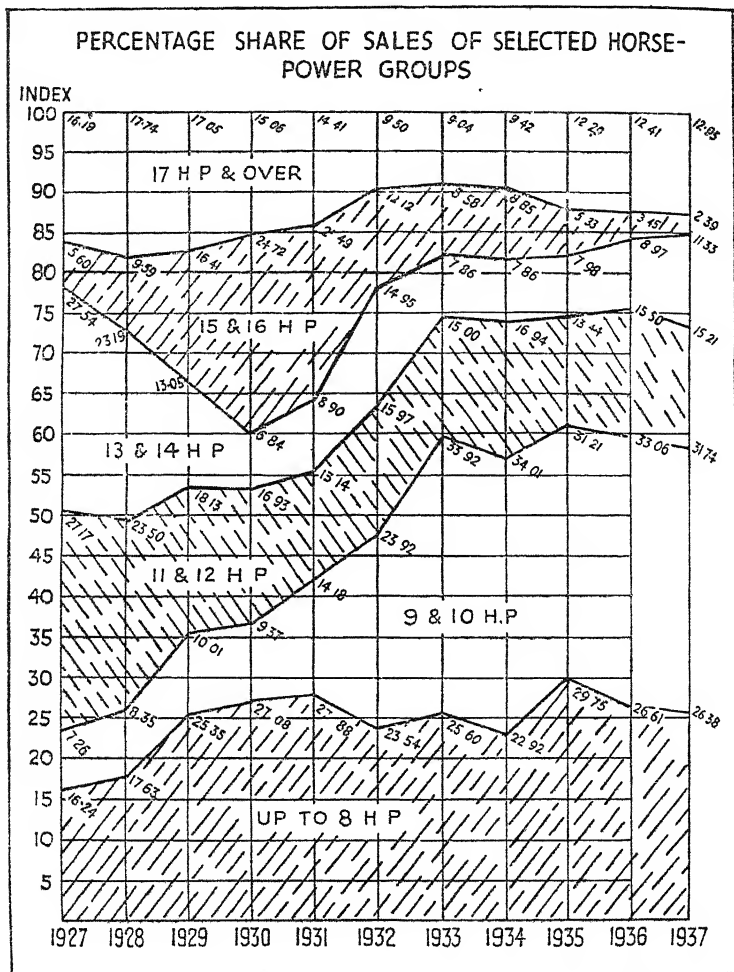
¹ Based on average fare of 96d. per mile

SALES

Sales of new private cars first showed signs of recovery in August, 1932. Goods vehicles were, however, several months later in showing definite signs of improvement, that is to say, not until May, 1933. Sales of new private cars have in the recovery period made vast strides and the classes of horse-power sold indicate a point that is often missed, viz. that the introduction of a popular 10 h.p. car which moved the 9 and 10 h.p. group from 14 per cent in 1931 to 32 per cent of the total market in 1937, still left the up to 8 h.p. group and the 11 and 12 h.p. group little changed in the share they held of total sales. The chart on page 318 illustrates the share held by selected groups of the total new sales in each year.

In January, 1935, there was a 25 per cent reduction in the horse-power tax, and it was hoped that this would give an impetus to the sales of cars of larger sizes, but actually there has been little change in the average horse-power of new cars licensed. An important effect of this reduction was, however, the

fact that fewer cars were laid up during the winter months." Thus the loss in revenue from direct taxation was made up not only



from natural expansion but from increased usage. National revenue was also increased as more petrol was consumed.

The recovery period has seen two very important changes in the sales of goods vehicles, the first being the tremendous growth in

the 2-2½ ton class from 5,055 in 1932 to 24,249 in 1937. The second important change was the introduction of an efficient heavy oil engine in 1932, at which date there were only 279 in use. By 1936 this total had grown to 6,149. It is probable, however, that for goods vehicles the growth in use and the new sales of heavy oil vehicles, which amounted to 1,660 in 1937, would have been considerably more if the heavy oil tax had not been raised in August, 1935, to 8d. per gallon for oil used for vehicle propulsion, even though the differential direct duty on heavy oil vehicles was at the same time abolished.

One of the anomalies of the hydrocarbon oil duty is that although it was imposed in 1928 for purposes of national revenue, and did not therefore directly appear to be part of motor taxation, nevertheless, in 1933 a differential duty according to fuel was imposed on the motor industry. It must be remembered, though, that the increased heavy oil duty applies only to vehicles used upon the road.

Sales of new vehicles in the United Kingdom are shown in the following table—

YEAR ENDED SEPTEMBER									
1928	1929	1930	1931	1932	1933	1934	1935	1936	1937
PRIVATE CARS									
161,403	169,355	156,460	144,212	145,874	182,046	219,510	271,701	302,057	326,793
TRUCKS									
37,911	53,770	53,331	52,751	46,882	50,524	67,349	69,604	78,465	81,476
HACKNEYS									
10,142	10,689	9,848	8,699	5,834	3,814	5,009	7,017	7,655	8,132
EXEMPT VEHICLES									
3,122	3,151	3,164	2,922	2,935	2,838	3,718	5,095	9,828	10,164
TOTAL OF ABOVE									
212,668	236,965	222,803	208,584	201,526	239,222	295,156	351,450	392,008	429,691
TRACTORS (AGRICULTURAL AND 5½ CLASS)									
195	148	112	101	155	203	240	232	65	190
TRACTORS (GENERAL HAULAGE AND SHOWING)									
334	271	386	232	183	142	207	227	221	237

RETAIL PRICES

There are many difficulties in giving an index so as to show the true average fluctuations in motor vehicle retail prices. The chief difficulties are (1) changes in the average class of vehicle purchased; (2) changes in vehicle design, (3) extra items included in the retail price; (4) alternative engine sizes with very little or without extra cost.

Practical examples of these three main difficulties are illustrated in the case of private cars by such events as the growth in popularity of the 8 h.p. and 10 h.p. cars, the low horse-power 6-cylinder engine, coupled with the vastly increased sales of closed vehicles, and the inclusion in the price of safety glass, spare wheels, and other expensive equipment.

The case of commercial vehicles is similar to the private car, with the addition that these vehicles are largely sold as chassis, the purchaser specifying the type of body required. The body may vary from the platform type to one costing more than the chassis itself

It was found impossible with the available data to give a weighted average, and in order to make the price index representative, ten or more models from each of the two classes of vehicles were chosen from manufacturers whose combined output was estimated to exceed 66 per cent of the total production. The method adopted in order to eliminate some of the difficulties mentioned above was to take the published retail chassis prices of these vehicles and to divide it (*a*) in the case of the private cars by the Treasury rating, and (*b*) in the case of the commercial vehicles by the unladen weight of the chassis plus the horse-power.

As the retail prices are those as at the end of the year they will in general be maintained until October or November of the next year. The 1937 price level should therefore be used as indicating 1938 prices.

Very little has been said about motor cycles, but it is pointed out that these have played an important part in the progress and development of the mechanically-propelled vehicle. The recovery period, for several reasons, gave little benefit to the

End of Year	INDEX OF RETAIL PRICES	
	Private Car Prices (1)	Commercial Vehicle Prices (2)
1914	76 0	78 0
1924	100 0	100 0
1925	97 1	89 7
1926	94 8	92 2
1927	91 6	85 2
1928	80 0	86 2
1929	75 0	84 3
1930	68 1	79 3
1931	60 8	75 5
1932	59 6	73 1
1933	61 4	69 5
1934	51 8	62 4
1935	49 8	61 6
1936	49 0	60 2
1937	50 5	63 5

manufacturers of motor cycles, the chief causes of the decline being the raising of the age limit for driving licences from 14 to 16 years, the high rate charged for compulsory third-party insurance, and the publicity given to fatal accidents to this class of road user. In the past the motor cyclist was looked upon as a potential car owner, and there can be little doubt that the cycle provides, for those with small incomes, a useful means of economic transport. Despite the lower cost of running and the reasonably low tax, however, the third-party insurance made it more difficult to license and insure the motor cycle out of income.

As a whole the motor industry was practically the first to show evident signs of recovery, not only by increased sales but by reason of an increase in the number of vehicles running on the road. This latter item is of vital importance, not only because it means a revenue from the fact of licensing but also because of the increased employment that is required to maintain the motor vehicle in good running order during its eight to ten years' average life. The sales value of new vehicles is very close to an average of £225 each, which gives a retail total sales value of over £114,000,000 for 1937 production, and it is probable that the sale of second-hand vehicles very closely approximates 1,000,000 a year, which even at an average of £50 apiece would

make the total turnover of all vehicles £160,000,000. The total money spent on maintenance, repairs, and garage and service equipment is not less than £40,000,000. So of the recovery years, in 1937 alone the motor industry accounted for a sales value of at least £200,000,000 and contributed a revenue of over £90,000,000 from taxes and duties. Few will deny that even one year's contribution of this magnitude entitles the motor industry to be considered a major factor of the post-depression years.

BIBLIOGRAPHY

The following is a brief bibliography of the most important publications relating to the motor transport industry—

GOVERNMENT PUBLICATIONS

- 1 Ministry of Transport's Monthly Return of New Vehicles Registered for the first time in Great Britain. This return gives by taxation classes new sales in each taxation area. Similar information is available for Northern Ireland from the Ministry of Home Affairs, Belfast.
- 2 Annual Report of the Area Commissioners. Containing details of public service vehicle licensing.
- 3 Annual Report of the Traffic Commissioners. Containing details of goods vehicle licensing.
- 4 Road Fund Report. Giving details of Highway expenditure and control, issued annually.
- 5 Trade and Navigation Accounts of the United Kingdom.

S.M.M. & T. PUBLICATIONS

- 1 The Motor Industry of Great Britain. An historical survey of the motor industry giving roads, taxation, legislation, production, registrations and trade. Separate sections deal with Rubber Tyres, Marine Motor Craft, and Motor Spirit and Oil.
- 2 Home Market Analysis. A detailed analysis of sales of new vehicles and vehicles in use in the United Kingdom, Ireland, Isle of Man and Channel Islands.
- 3 Economic Loose Leaf Service. Giving exports and imports to and from the various markets, details of import duties imposed, registrations by makes in world markets, etc.
- 4 Collated sets of Acts and Orders affecting road vehicle construction and use in Great Britain, with detailed index.

BRITISH SHIPPING SINCE 1934

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BRITISH SHIPPING SINCE 1934

1. The chapter on the "World Economic Crisis and British Shipping" in *Britain in Depression* dealt with the period 1928-34. The economic crisis reached its worst in the autumn of 1932, and in the following tables dealing with the period of recovery the data for the years 1932 to 1934 are repeated for the sake of continuity, and brought up to date by the inclusion of the latest available figures

2. The world total of merchant shipping, steam, motor, and sail, reached a post-war maximum of 70·13 million gross tons in June, 1931. During the next few years the net tonnage built fell short of the tonnage lost or broken up until by June, 1935, the world total was 64·89 million gross tons, a reduction of 5·24 million gross tons in four years.

The depression hit British shipping harder than shipping in other countries. For the world as a whole the adjustment of supply to demand was reached by the excess of the two elements—vessels lost and vessels broken up—over new construction. For the United Kingdom there was a third element, an increase in the tonnage sold annually to foreign owners. For the United Kingdom the reduction in tonnage owned commenced a year earlier than for the world as a whole, and continued a year longer. From a total of 20·44 million gross tons owned in June, 1930, the tonnage owned in the United Kingdom decreased steadily to a total of 17·29 million gross tons in June, 1936, a reduction of 3·15 million gross tons in six years. The world total increased by 1·40 million gross tons in the two years from June, 1935, to June, 1937, and the United Kingdom total by 0·35 million gross tons between June, 1936, and June, 1937. Comparing tonnages on the same dates, June, 1932, and June, 1937, for the United Kingdom and other countries, Britain emerged in 1937, the first good year for shipping, with a loss of 2·13 million gross tons. For the rest of the world the loss was 1·21 million gross tons. Great Britain owned 39·2 per cent of the world's shipping in June, 1914, and 29·6 per cent in June, 1929, the last year before the

depression, 28.2 per cent in June, 1932, the worst year of the depression, and 26.5 per cent in June, 1937

3 The long-continued depression produced unequal effects on the component sections of the merchant shipping of the United Kingdom. United Kingdom merchant shipping can be divided broadly into tonnage employed in the coasting trade and tonnage employed in the foreign trade. There is, however, a part of the foreign trade called "home trade" in official statistics, subject to regulations more nearly akin to those in the coasting than in the foreign trade. This consists of trade between ports in the United Kingdom and continental ports between the Elbe and Brest inclusive. Some vessels are exclusively engaged in this trade and some find alternative occupation in this trade and the coasting trade. In each of the three trades, vessels may be tramps carrying whole cargoes between any two ports as occasion arises or cargo liners carrying miscellaneous cargoes, including large parcels of bulk cargoes such as grain, in competition with tramps, but on fixed routes, to a regular time-table, or passenger liners or mixed cargo and passenger liners carrying cargo, passengers, and mails on routes to time-tables more rigid than those of cargo liners. There are also tankers, i.e. vessels fitted for carrying petroleum in bulk, whose numbers and tonnage in recent years have become of increasing importance.

Details of the composition of United Kingdom merchant shipping on these lines for the years 1914, 1929, 1933, and 1936, may be found in Part I of Volume 101, 1938, of the *R.S.S. Journal*.

The table on p. 327, extracted from a table on page 61 of the article in the *Statistical Journal*, summarizes the comparative positions under these headings in October, 1933, and June, 1936.

The total on the Register on 30th June, 1936, showed a reduction of 452 vessels of 1,266,948 gross tons compared with the total on 1st October, 1933. To this reduction tramps and cargo liners in the foreign trade contributed 194 vessels of 474,642 gross tons, and passenger and mixed passenger and cargo vessels in the foreign trade contributed 110 vessels of 618,596 gross tons.

The totals in this table refer to vessels returned by the Registrar-General of Shipping as on the United Kingdom Register on

UNITED KINGDOM TONNAGE ON 1ST OCTOBER, 1933, AND
30TH JUNE, 1936

	1ST OCTOBER, 1933		30TH JUNE, 1936	
	No	Gr Tons	No	Gr Tons
TRAMP AND CARGO LINERS				
Coasting and Home Trade	854	661,428	1014	768,379
Foreign Trade ¹	2048	9,275,629	1854	8,800,987
TOTAL	2902	9,937,057	2868	9,569,366
PASSENGER AND MIXED PAS- SENGER AND CARGO				
Coasting and Home Trade	300	319,339	208	288,931
Foreign Trade ¹	494	4,506,137	384	3,887,541
TOTAL	794	4,825,476	592	4,176,472
TANKERS				
Coasting and Home Trade	28	14,524	38	44,151
Foreign Trade ¹ and Admir- alty Tankers	373	2,227,868	365	2,166,580
TOTAL	401	2,242,392	403	2,210,731
OTHER TYPES	146	101,069	77	66,772
NON-TRADING	2620	825,000	2732	749,417
BALANCE not analysed	621	457,719	360	349,007
TOTAL ON UNITED KINGDOM REGISTER	7484	18,388,713	7032	17,121,765

the given dates and therefore do not coincide with the totals in Table I which, for the sake of comparability with the statistics of shipping owned in foreign countries, are prepared from Lloyd's Register of Shipping. The non-trading vessels, 825,000 gross tons in October, 1933, and 750,000 gross tons in June, 1936, are mainly fishing vessels, together with tugs, pilot boats, dock and harbour craft, vessels belonging to lighthouse authorities, cable ships, and so forth.

4. The difficulties of the passenger liners and combined cargo and passenger liners were due to shrinkage in world trade and to the Government subsidies given to foreign lines. Tramp shipping and much cargo liner shipping suffered equally from shrinkage in world trade, but not so much from foreign subsidies. The running costs of British tramp shipping were, however, much higher

¹ Including vessels employed partly in the home and partly in the foreign trade

than those of the chief foreign competitors, particularly the Greeks. The liner companies had great financial resources which were crippled but not destroyed by the depression.

Much financial reconstruction involving loss of capital and a depletion of reserves was inevitable and is well illustrated by the collapse of the Royal Mail group. The only step taken by the Government involving direct financial responsibility so far as liner companies are concerned, was the help given to the Cunard White Star Line for the financing and insurance of the *Queen Mary* and her sister ship the *Queen Elizabeth* now under construction. It is interesting to note in this connection, as an indication of the lines the Government were to pursue in dealing with the tramp section of the industry, that a condition preliminary to the financial assistance given to the Cunard Company for the construction of these vessels was the amalgamation of this Company with the White Star Line so as to reduce unnecessary competition on the Atlantic route.

5. Tramp shipping is more exposed than other sections of shipping to foreign competition. In the direct trade between the Dominions and the United Kingdom, British liner companies with old and firmly established organizations get the bulk of the available trade. This is illustrated by the fact that in 1936, British vessels accounted for 89.6 per cent of the tonnage entered with cargoes from British countries, and 95.2 per cent of the tonnage cleared with cargoes to British countries. Successful competition of subsidized foreign lines in the direct trade between two British countries, when it occurs, is due to special circumstances. An illustration is that of the liner trade between Canada and Australia where the financial results of the voyage depend on intermediate calls for cargo and passengers at San Francisco and Honolulu. A heavily subsidized American line was able to drive one British line out of the trade because, under American law reserving coastwise trade to American flag ships, the British line was not allowed to carry between San Francisco and Honolulu.

A Special Committee on Tramp Shipping appointed by the Council of the Chamber of Shipping in October, 1933, referred to the great decline of British tramp shipping between 1913 and

1933 both in number and in tonnage, and to the great increase in foreign tramp tonnage, and also in British liner tonnage. The steady substitution of liner for tramp tonnage was of course a normal development, but the same is not true of the replacement of British tramp shipping by foreign tramp shipping. The Report went on to say—

The decline in world trade is largely due to artificial restrictions imposed by Governments in the interests of home industries and agriculture, or the maintenance of budgetary and exchange stability. Such restrictions are almost universally harmful to shipping. Great Britain is now no exception to this policy and while other industries have been assisted by measures which react to the detriment of British shipping, British shipowners have received no corresponding aid. In contrast shipowners, including tramp owners, in many other countries are directly assisted by their Governments. In addition, vessels under many foreign flags are operated on lower working costs in respect of the number of crew, wages, victualling, etc.

The result is that British tramp shipping has been brought to the edge of bankruptcy, banks and shipbuilders are deeply involved in shipping; the Empire is threatened with the permanent loss of tramp tonnage, the adverse trade balance is increased by the loss of tramp earnings, nearly 23 per cent of British tramp shipping is laid up and that which is running is unable to earn depreciation required for the replacement of ships as they wear out.

The Committee's recommendation was that the paramount need of British tramp shipping was for more cargo—

This is the only stable and permanent cure, but while it may tend to come naturally it will come very slowly, and British tramp shipping cannot wait indefinitely for it.

If British tramp shipping was to survive, some definite action had to be taken forthwith, and the Committee accordingly recommended that the Government be asked to grant a temporary subsidy with the object of equalizing the advantages of foreign competitors due to subsidized depreciated currencies and lower wage costs.

Government action took the form of the British Shipping (Assistance) Act, 1935, which in Part I provided a subsidy not exceeding £2 million for the year 1935 "for the purpose of helping the owners of vessels registered at ports in the United Kingdom

to compete with foreign shipping in receipt of subsidies from foreign Governments "

Part II of the Act contained the so-called "scrap and build scheme" under which advances not exceeding in the aggregate £10 million could be made for the building of new or modernizing of old tramp vessels, provided that 2 gross tons of old tramp shipping were to be demolished for every gross ton built, and 1 gross ton of old shipping was to be demolished for every gross ton modernized. No great use was made of this part of the Act. The period during which advances were to be available was two years from the commencement of the Act, and the total advances made during the period were about £3½ million.

A Memorandum on the Financial Resolution accompanying the Subsidy Act contained an interesting provision which implied that the year 1929 was a year of normal trading, and provided for a reduction of the subsidy by stages as tramp freights approached the average level for that year.

14 If in the opinion of the Board of Trade at the end of the subsidy year the average level of freight rates for the year (expressed as an index number representing a percentage) was less than the average for 1929 (represented by 100 per cent) then the total sum payable by the Treasury for the year will be a sum not exceeding a quarter of a million pounds for every unit per cent by which the average for the subsidy year is less than the average for 1929, subject to a maximum of £2 million.

Two committees were set up under the Act—

(1) The Tramp Shipping Administrative Committee established by the industry itself, whose main functions were to be the active promotion of co-operation among shipowners in—

- (a) minimizing domestic competition;
- (b) improving freight rates and conditions; and
- (c) promoting as against foreign subsidized competition the fullest possible employment of British tramp shipping.

(2) The Tramp Shipping Subsidy Committee, a statutory committee appointed by the Board of Trade to administer the subsidy.

The methods of co-operation adopted by the Administrative Committee consisted in the main of the introduction of minimum freight rate schemes in the three most important grain markets of the world, namely, those from the River Plate,

Australia, and the St. Lawrence to Europe. The co-operation of foreign tramp shipowners in the observations of these minimum freight rate schemes was sought and obtained. The Subsidy Act was re-enacted for 1936 and again for 1937. Whether as the result of the schemes of minimum rates or of the improvement in world trade—probably for both reasons—shipping freights improved in the second half of 1936 and still more for the first nine months of 1937 to such an extent that the provision quoted from the Financial Resolution operated so as to make no subsidy payable for the year 1937.

The six half-yearly reports of the Tramp Shipping Administrative Committee, published as Command Papers presented by the President of the Board of Trade to Parliament, form an interesting contribution to the economic history of the period. For the present purpose it is sufficient to refer to Table IX of the Appendix included in the Fourth Report covering the second six months of the year 1936. The Committee reported that freights for each of the three months, October, November, and December, 1936, were above the average level of 1929, but added (para. 9 of the Fourth Report)—

Six months of relative prosperity cannot make up for six years of the worst depression in the modern history of shipping. There has not yet been time to repair that "state of exhaustion" referred to by the President of the Board of Trade when announcing the Government's willingness to grant the subsidy. During those six lean years (which themselves followed a period of no marked prosperity) shipowners with few exceptions were unable to pay interest on capital or even to square the yards on operating expenses. What is even more serious is that they were unable to put by more than a small fraction of the depreciation required for the renewal of their fleets, as ships wear out. As a result the industry is to-day faced with gigantic arrears of depreciation which must be met if the mercantile marine is to be maintained at even its present strength. It is the Government's declared policy "to secure the maintenance of a mercantile marine adequate for the needs of the country."

With a view to enabling the Committee more accurately to assess the financial position of the industry and to determine the extent of the leeway to be made up, an inquiry was instituted with all shipping companies receiving the subsidy.

Table IX contains the results of the inquiry and is by itself an excellent summary of the position of the industry year by year.

during the six years 1930 to 1935 The Report summarizes the table as follows—

(1) out of a total depreciation required of £18,665,000 over the last six years no more than £8,076,000 has been provided from all sources leaving net arrears of depreciation still to be made good of £10,589,000,

(2) the subsidy has enabled shipowners to meet depreciation to a great extent in 1935 and 1936 and has been mainly used for that purpose,

(3) the bulk of such depreciation as has been provided has been met out of investments or other sources, not from profits of ship operation,

(4) nearly one-fourth of the depreciation was provided in the trading year ended in 1930 and thus included sums set aside during or as a result of the better trading conditions of 1929 and previous years

6. The upward movement in tramp shipping freights commenced in the autumn of 1936 and continued until September, 1937. Shipping companies' accounts published during 1937, and referring largely to the year 1936, already showed satisfactory results. The accounts published towards the end of 1937 and early in 1938 make it clear that earnings for 1937 were at a level sufficient not only to provide for current depreciation and a return on capital but also to contribute towards arrears of depreciation in the depression years. The data furnished by tramp shipowners to the Board of Trade in connection with applications for a subsidy, provided for the first time full information of tramp voyages of British ships, the cargoes carried and the freights earned, and furnished material for the preparation of a weighted index number. This information is summarized and analysed in the paper in the *Statistical Journal* previously cited The values of the weighted index number for the ten months September, 1937, to June, 1938, were as follows—

September, 1937	201·7	January, 1938 .	. 138·2
October, 1937 .	190 0	February, 1938 .	. 129·5
November, 1937	162·9	March, 1938 .	. 127·5
December, 1937 .	141·0	April, 1938 .	. 126 9
		May, 1938 .	. 130·6
		June, 1938 .	. 123 1

and may be compared with the yearly averages shown in Table VI. The general downward trend during the last ten months is obviously parallel to what has been politely called "the

recession" in world trade as a whole. That the combined fall in the ten months is no more than 39 per cent must be attributed to the continuation on a voluntary basis during 1938 of the schemes of co-operation in the minimum freight rates after the expiry of the Subsidy Acts, at the end of 1937

7 Brief comments may now be made on the remaining tables in the Appendix

Table II summarizes the results of a special inquiry conducted for the year 1936 and may be compared with the corresponding table in the volume *Britain in Depression*. It shows that a greater proportion of the earnings of British shipping is derived from trade in which both terminals are in a foreign country, in a year of comparatively good trade, such as 1936, than in a year of bad trade, such as 1931. The table applies to the earnings of British shipping as a whole. A corresponding analysis of the earnings of the tramp section of the industry is contained in the article in the *Statistical Journal*, and shows that for that section the proportion of earnings derived from FF trade was over 25 per cent in 1935

Table III shows that, comparing 1937 with 1932, the weight of United Kingdom imports increased by 23 million tons, and the weight of United Kingdom exports by 5 million tons. The weight of coal exports showed very little change until 1937, and was even then more than 20 million tons less than the 1929 total of 64.4 million tons.

Table IV. The passenger movement to and from the United Kingdom showed considerable improvement in 1936 and in 1937, but was largely influenced in 1937 by the Coronation celebrations

Table V. The contribution of shipping to the balance of payments differs from the corresponding item in the Board of Trade estimates in that the latter includes, for convenience, an estimate of the expenditure of foreign ships in British ports. The figure for 1936 was based on a direct inquiry.

The contribution for 1938 may be expected not to show the full effect of the fall in freights during recent months, as many contracts were fixed and time charters arranged at the higher freights prevailing towards the end of 1937.

Tables VII and VIII enable the gradual decline in shipping

owned in the United Kingdom since June, 1932, to be traced, and show that as between June, 1932, and 1937, the shipping owned was steadily falling, but shipping in commission was steadily increasing until for all practical purposes our tonnage was fully employed in June, 1937

APPENDIX

TABLE I

SHIPPING (VESSELS OF 100 GROSS TONS AND OVER) RECORDED
IN LLOYD'S REGISTER BOOK

		Great Britain and Ireland	World
JUNE		Gr Tons (Mn)	Gt Tons (Mn)
1932	Steam	16 94	58 33
	Motor	2 62	10 04
	Sail	0 11	1 37
		<u>19 67</u>	<u>69 73</u>
1933	Steam	15 98	56 43
	Motor	2 62	10 20
	Sail	0 11	1 29
		<u>18 70</u>	<u>67 92</u>
1934	Steam	14 91	53 75
	Motor	2 72	10 60
	Sail	0 11	1 22
		<u>17 73</u>	<u>65 58</u>
1935	Steam	14 41	52 42
	Motor	2 89	11 30
	Sail	0 10	1 16
		<u>17 40</u>	<u>64 89</u>
1936	Steam	14 00	51 71
	Motor	3 18	12 29
	Sail	0 10	1 06
		<u>17 29</u>	<u>65 06</u>
1937	Steam	13 70	51 52
	Motor	3 74	13 75
	Sail	0 11	1 01
		<u>17 54</u>	<u>66 29</u>

TABLE II
GROSS EARNINGS OF BRITISH SHIPPING IN FOREIGN TRADE, 1936
Distribution Percentage according to Trade Routes
(U = United Kingdom Ports)
(E = Empire Ports outside United Kingdom)
(F = Foreign Ports)

	Gross Receipts	Gross Receipts Less Expenditure Abroad
	Percentage	Percentage
UE	38.8	42.1
EE	7.7	4.6
UF	25.2	29.6
EF	13.6	10.7
FF	14.7	13.0
	<u>100.0</u>	<u>100.0</u>

Based on Special Inquiry conducted by Chamber of Shipping in 1937

TABLE III
ESTIMATED WEIGHT OF IMPORTS AND EXPORTS OF THE
UNITED KINGDOM

	IMPORTS	EXPORTS		
		Coal	Other than Coal	Total
	Tons (Mn)	Tons (Mn)	Tons (Mn)	Tons (Mn)
1932	52.3	41.9	10.1	52.0
1933	55.4	42.1	9.8	51.9
1934	62.4	42.6	11.1	53.7
1935	62.8	41.9	11.6	53.5
1936	72.0	37.4	11.7	49.1
1937	75.3	43.5	13.5	57.0

TABLE IV
PASSENGER MOVEMENT—UNITED KINGDOM

	To and From Countries Out of Europe	To and From the Continent of Europe ¹
	(000)	(000)
1932	499	2010
1933	479	2274
1934	490	2329
1935	497	2566
1936	560	2848
1937	564	3605

TABLE V
CONTRIBUTION OF SHIPPING TO BALANCE OF PAYMENTS IN THE
FOREIGN TRADE OF THE UNITED KINGDOM

Year	Estimated Gross Earnings of U K Ships Engaged in Foreign Trade (Less Expenditure in Foreign Ports)
	£ (Mn)
1932	62
1933	59
1934	64
1935	65
1936	75
1937	115

TABLE VI
TRAMP SHIPPING FREIGHTS

Year	Old Chamber of Shipping Index (1913 = 100)	Year	New Weighted Index (1935 = 100)
1932	80.2		
1933	77.5		
1934	80.6	1929	133.5
1935	81.1	1935	100.0
1936	96.5	1936	112.6
1937	149.3	1937	175.6

¹ Omitting passengers by aircraft

TABLE VII
GREAT BRITAIN AND IRELAND

	Shipping Owned	British Shipping Laid Up in U K Ports	Shipping in Commission
	Gr Tons (Mn)	Gr Tons (Mn)	Gr Tons (Mn)
June, 1932	19 67	3 56	16 11
June, 1933	18 70	3 21	15 49
June, 1934	17 73	1 72	16 01
June, 1935	17 40	0 98	16 42
June, 1936	17 29	0 76	16 53
June, 1937	17 54	0 10	17 44
1st April, 1938	17 63	0 42	17 21

TABLE VIII
GREAT BRITAIN AND IRELAND

	Tonnage Launched	Tonnage Broken Up	Tonnage Sold to Foreign Buyers for Trading
	Gr Tons (Mn)	Gr Tons (Mn)	Gr Tons (Mn)
1932	0 19	0 45	0 31
1933	0 13	0 64	0 63
1934	0 46	0 56	0 33
1935	0 50	0 47	0 33
1936	0 86	0 48	0 28
1937	0 92	0 12 ¹	0 45

¹ Provisional

² British owners bought 80,000 gross tons from foreigners for trading

TABLE IX
TRAMP SHIPPING AND DEPRECIATION

	TRADING YEARS ENDING IN ¹						
	1930	1931	1932	1933	1934	1935	Total for 1930-5
Number of Companies	201	201	205	213	221	212	211 (average)
1 Number of Tramp Vessels at end of year	933	935	931	916	881	881	913 (average)
2 Gross Tonnage	3,546,000	3,577,000	3,596,000	3,546,000	3,440,000	3,111,000	3,515,000 (average)
3 Paid up capital (Ordinary shares)	25,690,000	25,561,000	25,606,000	26,379,000	25,849,000	26,006,000	25,819,000 (average)
4 Aggregate amount of depreciation on vessels, calculated at 5 per cent of original cost	3,122,000	3,168,000	3,196,000	3,118,000	3,037,000	3,024,000	3,166,000
5 Amount actually provided for depreciation, viz	1,920,000	1,441,000	1,331,000	1,132,000	1,043,000	1,209,000	1,470,000
(a) out of profits in respect of voyages (including subsidy)							
(b) from income from investments, etc	919,000	359,000	340,000	287,000	302,000	750,000	406,300
(c) by transfer from reserves	169,000	216,000	283,000	265,000	184,000	140,000	202,700
(d) distributed in dividend on the paid up capital	832,000	866,000	691,000	580,000	557,000	310,000	3,345,000
6 Amount of profits in respect of voyages (including subsidy)	751,000	336,000	285,000	246,000	267,000	379,000	2,261,000
(b) from income from investments, etc	345,000	48,000	43,000	29,000	35,000	95,000	592,000
(c) by transfer from reserves	307,000	216,000	152,000	182,000	199,000	263,000	1,321,000
7 Percentage rate of dividend paid on Ordinary shares, i.e. (6) - (3)	101,000	72,000	90,000	36,000	36,000	16,000	351,000
8 Amount of subsidy received for 1935	29	13	11	0.9	1.0	1.5	1.5
9 Arrears of depreciation, i.e. (4) less (5)	1,202,000	1,727,000	1,865,000	1,986,000	1,994,000	1,815,000	1,963,000 ¹
							10,583,000

¹ As the Companies' Accounts for 1935 are not all made up to 31st December, 1935, and the subsidy payments for the third and fourth quarters of 1935 were not made until December, 1935, and March, 1936, respectively, it may be that part of this total comes into the Companies' Accounts for 1936.

Summary of replies received from Tramp Shipping Companies in reply to a Chamber of Shipping questionnaire of 31st November, 1936
(Fourth Report of Tramp Shipping Administrative Committee, Cmd 5303)

THE SHIPBUILDING INDUSTRY

By H M HALLSWORTH, C B E , M A

FORMERLY OF KING'S COLLEGE, NEWCASTLE UPON TYNE

THE SHIPBUILDING INDUSTRY

DURING the crisis which began towards the end of 1929 the building of merchant vessels in the shipyards of the world declined to little more than half their pre-war amount. In the five years 1909 to 1913 the average tonnage launched each year was 2,488,940, and in the five years 1924 to 1929 (omitting 1926 owing to the General Strike in Great Britain) the average was 2,443,857 tons, or practically an equal amount. But in the five years 1930 to 1934, though 1930 was an even better year than 1929 (2,889,472 tons as against 2,793,210 tons), the average tonnage launched was only 1,337,923 tons. In 1933 it amounted only to 489,016 tons or less than one-fifth of the average in the five pre-war years. There was a partial recovery in 1934 to 967,419 tons, and the process of recovery has continued in the three following years. The position is shown in the following table—

WORLD SHIPBUILDING	
Years	Merchant Tonnage Launched
1909-13	2,488,940 (yearly average)
1919-23	4,294,665 (yearly average)
1924-29 ¹	2,443,857 (yearly average)
1930-34	1,337,923 (yearly average)
1929	2,793,210
1930	2,889,472
1931	1,617,115
1932	726,591
1933	489,016
1934	967,419
1935	1,302,080
1936	2,117,924
1937	2,690,580

In both 1936 and 1937 the 2 million tons level was exceeded and 1937 was almost as good a year as 1929 or 1930.

¹ 1926 omitted owing to the General Strike in Great Britain

The contributions to this world output in 1937 from the different shipbuilding countries¹ have been as follows—

	No of Vessels	Tons	Percentage Tonnage
Great Britain and Ireland	309	920,822	34.2
Japan	180	451,121	16.8
Germany	174	435,606	16.2
The United States of America ²	103	195,767	7.3
Holland	112	183,509	6.8
Sweden	38	161,008	6.0
Denmark	26	131,410	4.9
Norway	38	41,993	1.6
France	9	26,511	1.0
Italy	6	21,918	0.8
Belgium	17	17,071	0.6
British Dominions	38	13,880	0.5
Other Countries	31	40,252	1.7
U S A Great Lakes	20	43,678	1.6
	1,101	2,690,580	100.0

The proportion of world merchant tonnage built in British shipbuilding yards has varied considerably in recent years. Prior to the war the proportion was about 60 per cent, having fallen fairly steadily from 80 to 60 per cent in the period 1890 to 1914. In recent years the proportions of tonnage launched have been as follows—

1927	53.6	per cent
1928	53.6	"
1929	54.5	"
1930	51.2	"
1931	31.7	"
1932	25.8	"
1933	27.2	"
1934	47.5	"
1935	38.3	"
1936	40.4	"
1937	34.2	"
1938 (March quarter)	28.8	"

The average proportion during the last five years has been 37.5 per cent. So far as the proportion of world merchant tonnage launched is concerned 1932 was the worst year for British shipbuilding, but the tonnage launched was actually less in 1933 (133,115 tons) than in 1932 (187,794 tons).

¹ Returns from Russia and Spain are not available

² Excluding the 43,678 tons launched on the Great Lakes.

Japan has in recent years overtaken Germany as the second most important shipbuilding country. Her proportion of world tonnage in 1913 was 1.9 per cent, in 1929 5.9 per cent, and in 1937 16.8 per cent, whilst Germany's proportions were 13.9, 8.9, 16.2 per cent respectively in the years mentioned. During the last five years, however, Germany's average output (231,572 tons or 15.3 per cent) has been higher than Japan's (223,721 tons or 14.8 per cent). It was only in 1933, 1934 and 1937 that Japan's output was the greater. The progress made by Sweden, Denmark and Holland in the post-war years has been remarkable. During the war their shipbuilding yards developed rapidly, as did those of Japan, and they have continued to enjoy most of the advantages they secured in those favoured years. The United States of America has, however, declined. Apart from the tonnage launched on the Great Lakes, her proportion of world tonnage has fallen from 6.8 per cent (228,232 tons) in 1913, and no less than 50.1 per cent (3,579,826 tons) in 1919, to 3.6 per cent (100,632 tons) in 1929, 2.2 per cent (10,771 tons) in 1933, and 7.3 per cent (195,767 tons) in 1937. The average merchant tonnage launched in the U.S.A. during the last five years, apart from that launched on the Great Lakes, was 73,006 tons or 4.8 per cent of world output.

The output of France, which in 1913 was 176,095 tons (or 5.3 per cent), had fallen to 81,607 tons (or 2.9 per cent) in 1929, and to 15,950 tons (or 1.7 per cent) in 1934 (her worst year since 1918). Her average tonnage launched during the last five years has been 31,712 tons or 2.1 per cent of world output.

The output for the chief shipbuilding countries of the world is given for the years from 1909 onwards, excepting the war years, in Table A (p. 344).

The tonnage of merchant vessels launched from British yards was, as we have said, lowest in 1933 when it amounted only to 133,115 tons. In the four following years the output very appreciably increased though the percentage of world output, which in these four years averaged 40.1 per cent, was well below the 54.5 per cent of 1929 or the pre-war percentage of 60 per cent. The actual tonnage in these four years was 459,877 in 1934, 499,011 in 1935, 856,257 in 1936, and 920,822 in 1937. In the

TABLE A

GROSS TONNAGE OF MERCHANT VESSELS OF 100 TONS GROSS AND UPWARDS LAUNCHED DURING THE YEARS SHOWN

*(The figures are in thousands of tons)**Abstracted from Lloyd's Annual Summary*

Great Britain and Ireland	British Dominions		Austria Hungary	Belgium	Holland	France	Germany	Italy	Denmark	Norway	Sweden	Spain	Japan	UNITED STATES		Other Countries	Total
	Coasts	Canal, Lake Ports												Coast	Great Lakes		
1911	6.6	0.9	25.0	6.3	59.1	42.2	128.7	31.2	7.5	28.6	6.3	2.2	52.3	80.5	120.1	4.5	1632.1
1912	14.6	1.17	14.3	6.2	70.9	80.8	159.3	23.0	12.2	36.9	8.9	3.2	30.2	177.6	153.7	11.0	1957.9
1893	10.0	3.7	37.8	7.6	93.0	125.5	255.5	17.4	18.7	35.4	9.4	3.8	44.4	95.7	75.9	6.5	2650.1
1908	23.1	9.7	38.8	18.5	99.4	110.7	375.3	25.2	26.1	50.3	14.0	4.3	57.8	194.3	99.0	23.9	2901.8
1912	26.7	21.6	61.8	30.2	104.3	176.1	465.2	50.4	49.9	50.6	18.5	8.5	64.7	228.2	48.2	4.8	3332.9
1914	29.5	24.4	—	2.4	137.1	32.6	1	82.7	37.8	57.6	51.0	52.6	611.9	3579.8	495.6	24.3	7144.5
1915	29.1	29.1	—	8.4	133.1	93.4	1	133.2	60.7	38.9	63.8	46.0	456.6	2348.7	127.5	42.0	5861.7
1916	11.3	11.4	—	17.9	132.4	210.7	509.1	170.9	77.2	51.5	65.9	47.3	227.4	1004.1	11.3	63.5	4356.8
1917	53.3	9.4	—	7.5	131.1	184.5	525.8	101.2	41.0	32.4	30.0	7.8	83.4	97.2	22.0	77.3	2167.1
1918	64.7	4.2	—	1.1	61.6	96.6	345.1	66.5	49.5	42.6	20.1	4.5	72.5	96.5	76.3	19.3	1643.2
1919	37.1	37.1	—	4.0	63.6	79.7	175.1	82.5	63.9	25.1	31.2	3.9	72.8	90.2	49.3	21.7	2247.8
1920	32.2	13.9	—	4.2	78.8	75.6	466.4	142.0	73.3	28.8	53.8	0.1	55.8	78.8	50.0	15.2	2193.4
1921	22.8	10.8	—	3.6	91.7	121.3	180.5	220.0	72.0	9.2	53.5	25.7	52.4	115.2	35.4	19.0	1675.0
1922	20.1	10.1	—	4.7	119.8	44.3	289.6	101.1	72.0	5.4	67.4	22.9	52.4	124.3	35.4	80.8	2285.7
1923	23.0	0.7	—	16.2	166.8	81.6	376.4	58.6	138.7	10.4	106.9	11.9	103.7	86.1	51.9	67.3	2690.2
1924	41.3	11.8	—	8.4	146.5	81.6	249.1	71.5	111.5	39.6	107.2	37.0	164.5	100.6	55.4	54.5	2793.2
1925	43.3	0.5	—	12.3	153.1	100.9	245.6	87.7	137.2	53.8	131.8	25.2	131.3	214.0	32.7	21.6	2889.5
1926	43.6	—	—	0.9	120.3	103.4	103.9	105.0	126.0	18.2	112.7	48.1	83.7	202.2	3.6	12.9	1617.1
1927	187.8	1.3	—	1.5	26.2	89.3	80.8	47.4	22.4	11.1	43.0	18.0	54.4	143.6	—	3.1	726.6
1928	133.1	—	—	4.5	35.9	34.1	42.2	16.6	34.0	9.7	60.9	18.4	74.3	10.8	—	2.0	489.0
1929	9.1	—	—	0.8	46.9	16.0	73.7	26.6	61.7	18.9	49.5	1.3	132.4	24.6	—	8.8	967.4
1930	499.6	1.1	—	1.2	57.1	42.8	226.3	22.7	122.1	25.7	105.5	3.1	145.9	32.6	—	6.3	1302.1
1931	856.3	6.2	—	4.2	93.8	39.2	380.0	11.3	97.5	33.2	154.0	1	145.9	101.3	16.6	94.0	2117.9
1932	13.9	—	—	17.1	183.5	26.5	435.6	21.9	131.4	42.0	161.0	—	451.1	195.8	43.7	24.3	2690.6

Since 1914 complete returns from Russia have only been available for the years 1926-9 For Spain the information may not be complete

1 Returns not available

TABLE B

GROSS TONNAGE OF MERCHANT VESSELS OF 100 TONS GROSS AND UPWARDS LAUNCHED IN THE SHIPBUILDING CENTRES
SHOWN DURING THE YEARS 1929-7

Abstracted from Lloyd's Annual Summary

Year	Barrow, Maryport, and Work- ington	Belfast	Clyde		Dundee	Tyne	Wear	Tees, Hartle- pool, Middles- brough, Stockton, Whitby	Hull	Leith	Liverpool and Birken- head	Other Districts	Total
			Glasgow	Greenock									
1929	19,970	143,855	342,585	189,794	17,191	271,601	245,511	162,209	27,046	31,674	54,608	16,489	1,522,623
1930	16,442	168,606	323,487	184,802	40,908	323,750	173,306	111,416	30,223	23,108	60,577	21,828	1,448,563
1931	51,199	78,272	104,722	43,670	24,671	129,992	8,814	38,990	7,616	2,138	12,001	8,592	592,487
1932	22,500	5,739	17,462	44,734	700	24,226	2,628	45,398	2,463	10,451	5,338	6,455	187,794
1933	—	13,800	20,283	28,187	7,396	11,033	11,701	14,685	8,431	7,549	5,332	6,455	133,245
1934	24,000	87,293	165,335	74,296	1,361	30,169	19,210	17,338	9,547	8,243	19,443	5,072	459,877
1935	23,428	96,763	90,475	70,125	5,275	80,736	31,382	22,810	8,610	20,411	31,707	8,289	499,011
1936	41,533	62,527	161,352	120,830	25,939	109,441	138,799	92,632	22,507	26,412	43,664	10,071	836,237
1937	47,820	74,274	187,047	149,850	21,039	102,121	155,723	83,355	16,368	35,887	34,350	12,988	920,822
Average 1933-7	27,356	66,932	124,898	88,318	12,202	66,700	71,363	46,174	13,993	21,594	26,499	8,687	573,846

last two years, therefore, output has increased more than six times. It, of course, remains well below the 1,522,623 tonnage output of 1929 or the 1,932,153 tons of 1913. Nevertheless, the increased volume of work has meant everything to a sorely tried industry.

It is worth while to look at each of the shipbuilding centres of the country and see how they have each fared in the depression since 1929. The chief centres are the Clyde, the north-east coast (the Tyne, Wear and Tees), Belfast, Barrow, Liverpool and Leith. Their respective outputs of merchant vessels launched since 1929 are shown in Table B (p. 345).

The centre which has made the most marked recovery is the Wear. Sunderland has long been famous as a shipbuilding centre, and her rivalry with the yards on the Tyne has been keen. In 1929 there were 245,511 tons of merchant shipping launched there, and in 1930 173,306 tons. Yet in 1931 the amount had fallen to 8814 tons and in 1932 to 2628 tons. It is not surprising, therefore, that successive industrial surveys of the north-east coast in those years expressed concern at the future of Sunderland as a shipbuilding centre, and considered it possible that the shipbuilding industry on the north-east coast would tend to concentrate on the Tyne. Yet in the last five years the growth on the Wear has been such that the average tonnage for these years (71,363 tons) exceeds the average tonnage of the Tyne (66,700 tons).

The average output of the three north-east coast centres, the Tyne, Wear, and Tees, is almost as large as that of the Clyde, being 184,237 tons as against 213,216 tons, and in 1937 actually exceeded it, 341,199 tons being launched as against the 336,897 tons on the Clyde. In most years the cargo output of the north-east coast, and especially of tankers, is generally larger, but the north-east coast centres have not quite the same experience as the Clyde in the building of the largest passenger liners in spite of the fact that probably the most famous of all, the *Mauretania*, was built on the Tyne.

With the exception of Barrow and Leith, none of the other centres has attained its output of 1929 and 1930. Barrow in the last two years has more than doubled her output, but Glasgow

has only a little more than half her former tonnage, the Tyne about one-third, the Tees and Liverpool a little more than half.

As is to be expected from the lessened output from British yards in relation to the rest of the world, the export of ships from this country has declined considerably in the last five years. This export trade was not, of course, confined to merchant vessels. Our naval construction for other countries was also considerable though it fluctuated greatly from year to year. The following table¹ shows the number, tonnage, and declared value of both new merchant vessels and new and complete warships exported in the five years prior to the war, and for the years since 1925—

Year	NEW VESSELS, OTHER THAN WAR VESSELS, COMPLETE			WAR VESSELS (NEW) COMPLETE		
	Number	Gross Tonnage	Declared Value	Number	Tonnage ²	Declared Value
1909	1126	301,534	5,680,114	4	2,362	247,000
1910	1045	218,990	3,875,704	11	31,420	4,894,500
1911	1433	387,643	5,637,315	6	180	25,800
1912	1498	377,680	6,262,162	5	5,426	765,000
1913	1508	463,160	8,409,430	2	19,430	2,617,100
1925	942	189,004	6,261,969	1	17	14,354
1926	889	149,214	4,610,679	4	60	19,300
1927	1082	174,792	4,485,267	7	81	45,388
1928	1087	353,377	10,755,424	6	21,130	5,143,150
1929	1035	377,510	11,690,916	14	15,712	3,820,250
1930	1130	655,822	19,435,016	8	5,331	707,400
1931	502	310,345	9,857,745	2	2,640	600,000
1932	472	79,889	3,388,575	1	2,400	525,000
1933	525	44,164	1,891,919	5	3,953	679,928
1934	979	38,393	1,165,019	2	4,294	597,586
1935	751	63,586	2,303,558	8	4,210	874,226
1936	770	110,693	3,479,243	8	121	119,039
1937	870	72,235	2,580,952	8	5,694	1,140,588
March qtr						
1938	177	25,041	1,059,848	—	—	—

¹ The figures are taken from official answers to questions in the House of Commons on 9th May, 1935, and 24th November, 1936, and from the accounts relating to Trade and Navigation of the United Kingdom published by the Board of Trade.

² Gross tonnage up to 1927, displaced tonnage from 1928.

The figures for 1909 to 1913 relate to exports from 'Great Britain and Ireland'; those for 1925 to 1937 relate to exports from Great Britain and Northern Ireland only.

The average tonnage of new merchant vessels exported during the last five years was 67,604 tons and the declared value £2,354,489, whereas in 1913 it was 463,160 tons of a value of £8,409,430, and in 1929 377,510 tons of a value of £11,690,916.

The export of war vessels in recent years has amounted only to about one-third of its value in pre-war years.

A considerable export trade in second-hand vessels has also been done by this country. The following figures kindly supplied by the Board of Trade show the number and tonnage of such vessels, other than war vessels and new-built merchant ships, of United Kingdom registry sold to foreign countries during each of the years 1913, 1919 to 1937. Their value is not known and their gross tonnage has been calculated from their net tonnage on the basis of a ratio of 1 ton net to 1·6 tons gross—

SECOND-HAND MERCHANT SHIPS SOLD TO FOREIGN COUNTRIES

Year	Number	Net Tonnage (Thousand Tons)	Estimated Gross Tonnage (Thousand Tons)
1913	433	488	781
1919	496	646	1034
1920	310	447	715
1921	326	526	842
1922	360	532	851
1923	328	489	782
1924	342	438	701
1925	300	340	544
1926	273	372	595
1927	282	526	842
1928	237	369	590
1929	248	433	693
1930	228	342	547
1931	217	366	586
1932	195	389	622
1933	259	595	952
1934	172	304	486
1935	191	382	611
1936	176	266	426

The figures for 1919 are, of course, exceptional. There was a great demand for ships throughout the world and the tonnage

price was high. It will be seen that the gross tonnage exported in 1913 has been exceeded in several other years since the war, namely, 1921, 1922, 1923, 1927, and 1933—the year when British shipbuilding yards had their lowest output of new vessels. The average tonnage of second-hand merchant vessels exported during the years 1932-6 has been 619,000 gross tons or about 79 per cent of the 1913 level.

The following table shows the tonnage and percentage proportion of merchant vessels launched in Great Britain and Ireland intended for registration at home and abroad respectively for the years shown—

Year	Total Tonnage Launched in Great Britain and Ireland	PERCENTAGE OF TOTAL TONNAGE LAUNCHED INTENDED FOR OWNERSHIP IN		
		Great Britain and Ireland	British Dominions	Foreign Countries
1909	991,066			18.35
1910	1,143,169			15.7
1911	1,803,844			19.1
1912	1,738,514			19.7
1913	1,932,153			19.8
...
1928	1,445,920	79.8	8.5	11.7
1929	1,522,623	82.9	2.1	15.0
1930	1,478,503	56.0	5.5	38.5 ¹
1931	502,487	59.3	13.0	27.7 ¹
1932	187,794	68.8	18.9	12.3
1933	133,115	90.9	8.2	0.9
1934	459,877	89.8	5.8	4.4
1935	499,011	87.2	10.5	2.3
1936	856,257	89.1	6.7	4.2
1937	920,822	86.5	8.6	4.9

During the last five years an average of 505,754 tons or 88.1 per cent has been built for registration in this country, 44,746 tons or 7.8 per cent for owners in the British Dominions and 23,316 tons or 4.1 per cent for owners in foreign countries. In the five years prior to the war Great Britain and Ireland was building nearly one-fifth of her total output for owners in foreign countries, in the last five years only one twenty-fifth of her output was for foreign owners. The decline in this part of her export

¹ The increase is largely accounted for by tankers financed by the builders

trade is indeed marked. In the five years prior to the war the United Kingdom built 61.1 per cent of the world tonnage launched, which represented an average annual output of 1,521,749 tons. The other northern European countries had an average annual output of 555,880 tons, or 22.3 per cent of world output, and the rest of the world 411,311 tons or 16.5 per cent, giving an annual world total of 2,488,940 tons. In 1937, the world total was 2,690,580 tons, of which this country launched 920,822 tons or 34.2 per cent, the other northern European countries 997,142 tons or 37.1 per cent, and the rest of the world 772,616 tons or 28.7 per cent.

Comparing 1937 with the average of the years 1909 to 1913, we see that world output increased by 201,640 tons. The output of this country diminished by 600,927 tons, much of which is accounted for by the other northern European countries, whose output increased by 441,262 tons.

Information as to the tonnage of merchant vessels launched in foreign yards but intended for registration in countries other than in the country of build is available only from 1936. In the table on p. 351, figures for the chief shipbuilding countries are given and, for comparison, the figures for Great Britain and Ireland. The tonnage shown for Great Britain and Ireland do not include tonnage built for owners in the British Dominions.

In 1936 only two European countries (France and Holland) had a lower percentage of ships launched for foreign owners than had Great Britain, and in 1937 Belgium alone had a smaller proportion. The proportion under construction at the end of the March quarter was rather better, but of European countries only Belgium, France, and Holland had a lower percentage proportion. The percentage figures of Denmark, Germany, Italy, Norway, and Sweden are striking. They show unmistakably that these countries have built up their shipbuilding industry to a capacity beyond the requirements of their own shipowners, in order to compete in the shipbuilding market of the world.

The countries other than the United Kingdom for which ships have been launched in British and Irish yards in 1936 and 1937 have been, in order of tonnage, the British Dominions (136,579 tons), Greece (38,225 tons), Russia (20,400 tons), Norway (7905

Country	TONNAGE LAUNCHED FOR OWNERS IN OTHER COUNTRIES ¹				TONNAGE UNDER CONSTRUCTION FOR OWNERS IN OTHER COUNTRIES ¹	
	1936		1937		March Quarter, 1938	
	Tonnage	Percentage of Country's Total	Tonnage	Percentage of Country's Total	Tonnage	Percentage of Country's Total
Great Britain and Ireland	35,846	4 .	45,219	4 9	155,011 ²	14 2
British Dominions	—	—	1,179	8 5	20,600	51 7
Belgium	179	11 3	111	2 6	1,400	4 6
Danzig	23,867	100 0	26,929	97 9	10,175	100 0
Denmark	59,706	61 2	113,878	86 7	73,302	78 0
France	—	—	7,031	26 5	6,080	8 1
Germany	199,712	52 6	228,708	52 5	171,011	47 0
Holland	3,799	4 0	41,449	24 2	32,933	10 6
Italy	6,239	55 0	11,000	50 2	113,850	71 1
Japan	9,690	3 3	14,746	3 3	5,515	1 8
Norway	3,812	11 2	5,318	12 7	8,815	19 1
Sweden	139,795	90 8	90,927	59 2	81,100	67 7
U.S.A.	2,334	2 1	113	0 2	—	—
Other Countries ²	531	5 2	4,700	23 1	766	3 3
TOTAL	485,840	37 3	594,971	22 1	712,586	24 6

¹ The tonnage shown for Great Britain and Ireland excludes tonnage for owners in the British Dominions.

² Information from Russia and Spain not available.

³ Excludes 20,019 tons under construction for country not stated.

tons), Yugoslavia (5400 tons), Germany (4794 tons), Iraq (2547 tons), France (723 tons), Panama (620 tons), and Holland (226 tons).

One of the reasons why the proportion of world tonnage built in British yards is declining is the fact that this country owns to-day a smaller proportion of the world's merchant fleet than in former years, as the table on p. 352 shows.

It will be seen that in 1914 Great Britain and Ireland had a total of 19,257,000 tons, steam, motor, and sailing vessels out of a world total of 49,090,000 tons, or 39.2 per cent. In 1929 she owned 20,166,000 tons out of a total of 68,074,000 tons or 29.6 per cent. In June, 1937, the total was 17,544,000 out of 66,286,000 tons or 26.5 per cent. The countries whose fleets show the largest expansion are the United States of America, Japan, Norway, and Italy, but a number of the smaller countries also show appreciable increases.

As was indicated in *Britain in Depression*,¹ one of the major

TABLE C
WORLD'S TOTAL MERCHANT TONNAGE
WORLD COMPARISON OF TONNAGE AT JUNE, 1914, JUNE, 1929, AND JUNE, 1937
(Thousands of Gross Tons)

Country	JUNE, 1914			JUNE, 1929			JUNE, 1937		
	Steam and Motor	Sailing Vessels	Total	Steam and Motor	Sailing Vessels	Total	Steam and Motor	Sailing Vessels	Total
Great Britain and Ireland	18,892	365	19,257	20,046	120	20,166	17,436	108	17,544
British Dominions	1,632	157	1,789	2,795	154	2,949	2,962	124	3,086
Denmark	770	50	820	1,033	23	1,056	1,118	—	1,118
France	1,922	397	2,319	3,303	76	3,379	2,844	26	2,870
Germany	5,135	324	5,459	4,058	35	4,093	3,928	9	3,937
Greece	821	16	837	1,267	— ¹	1,267	1,855	—	1,855
Holland	1,472	25	1,497	2,932	7	2,939	2,631	3	2,634
Italy	1,430	238	1,668	3,215	69	3,284	3,174	39	3,213
Japan	1,708	—	1,708	4,187	— ¹	4,187	4,475	— ¹	4,475
Norway	1,957	547	2,504	3,218	7	3,225	4,347	—	4,347
Spain	884	15	899	1,136	25	1,161	1,044	11	1,055
Sweden	1,015	103	1,118	1,480	30	1,510	1,494	8	1,502
U S A (Sea)	2,027	943	2,970	11,036	799	11,835	9,347	449	9,796
U S A. (Lakes)	2,260	92	2,352	2,451	91	2,542	2,441	99	2,540
Other Countries	3,479	414	3,893	4,250	231	4,481	6,175	139	6,314
WORLD TOTALS	45,404	3686	49,090	66,407	1667	68,074	85,271	1015	86,286

¹ Sailing vessels owned in this country are not recorded in Lloyd's Register

problems confronting the shipbuilding industry alike in Great Britain and in other shipbuilding countries is that their capacity to build is greater than the present demand for ships. In November, 1937, in spite of the increase in tonnage launched in that year only about two-thirds of the berths in British yards were occupied. Exact information on this point is not available for the other countries, but from the little evidence available it would appear that in most of them the proportion of empty berths is definitely less than this. Though the demand for new ships was much greater in 1936 and 1937 than in 1932, it still lagged behind the capacity of the yards, in spite of the scaling down which the industry had undergone.

In Great Britain a company—National Shipbuilders' Security Ltd.—was formed in 1930 and most of the shipbuilding firms of the country became shareholders agreeing to pay a levy of 1 per cent of the contract or sale price of vessels commenced after the 1st November, 1930. These levies have been used to purchase and dismantle obsolete or redundant yards, which are then closed down, and the sites of which are disposed of to other industries. By the end of 1934 the Company had purchased and scrapped some 137 berths with an annual building capacity of about 1,000,000 tons. Since 1934 a few further yards have been secured, but in the renewed activity of the last three years the scrapping policy has naturally slowed down. The question whether the policy should be carried further in this country is a difficult one. Idle berths, it is true, are a drain on the industry. Building costs fall as the proportion of berths occupied in a given yard rises, other things, of course, being equal. On the other hand, ought a surplus capacity of 30 to 40 per cent to be deemed excessive in view of the fluctuating nature of the industry on the one hand and the safety of the country on the other? In the present condition of world affairs a situation might easily arise when the whole of this surplus capacity would be most urgently needed. One cannot help but feel therefore that the view we took in 1934, that in consideration of national interests the scrapping policy should be carried little if any farther than it has now gone, was a sound one.* And there are signs that the shipbuilders themselves take this view, even though it means in effect that the industry

is being asked to bear a financial burden which properly belongs to the State

Moreover, with the turn of the year the situation has taken a turn for the worse, and as we write the position is an anxious one. Let us see how it arises. In the following table are given the statistics of merchant vessels commenced, or launched or under construction in British yards in the last five quarters.

MERCHANT VESSELS COMMENCED, LAUNCHED OR UNDER CONSTRUCTION
(GREAT BRITAIN AND IRELAND)
(The figures are in thousands of tons)
(From Lloyd's Register Quarterly Returns)

Period	Commenced during the Quarter	Launched during the Quarter	Under Construction at the Close of the Quarter
March quarter, 1937	253.5	175.7	1014.5
June quarter, 1937	367.7	252.6	1200.0
September quarter, 1937	218.6	265.6	1184.6
December quarter, 1937	217.5	223.5	1125.4
March quarter, 1938	173.0	180.0	1089.1

If we had regard only to the figures of vessels under construction, the position in March, 1938, would appear hardly less fortunate for the industry than at the end of June, September, or December, 1937. But it must be remembered that an individual vessel from its commencement to its completion is taken at its full tonnage value in the "under construction" figures, whereas in any given quarter only a fraction of this is of value to the firm building it. Thus in the case of a 12,000 ton vessel taking 12 months to build, 12,000 tons would appear in each of the four quarters in the "under construction" figures, but the average amount of construction per month would be only 1000 tons. In practice, however, construction does not proceed evenly. It gradually increases to a maximum and then falls off rapidly in the later stages of construction. Consequently, the "under construction" tonnage figure may be high and yet so many of the vessels may be in the later stages of production that the actual volume of work done in a given period may be considerably lower.

Under these conditions the yards may be seriously short of work and much shipyard labour be unemployed. This, unfortunately, would seem to be the position in which the industry finds itself in April of this year. A considerable proportion of the tonnage at present under construction is in the later stages of construction, and most of it will come to an end in June. In the absence of fresh work the position of the yards will be a serious one. It is necessary, therefore, to look at the statistics of tonnage commenced or launched. In both respects, the figures for the March quarter are down, to 173,031 and 179,992 tons respectively. Thus the tonnage commenced is less than half the amount in the June quarter and lowest for any March quarter since 1935.

But, it may be thought, the shortage of work on merchant vessels in the shipyards may be made up by the increasing amount of Admiralty work. This however is only partially true. The increase in naval work only to a small extent compensates for the decrease in merchant shipbuilding. Moreover, a warship does not give as much work to the yard as does a merchant vessel of equal capital value, since a large part of the capital value of a warship is accounted for by the armament and the heavier steel put into hull and decks, and these are supplied from other centres.

Shipbuilding firms are therefore once more faced with rising costs of construction—quite apart from changes in the cost of labour and materials—owing to the diminution in the amount of work over which their overhead charges can be distributed. Coming as it does when the demand for ships and their values are falling, it confronts the industry once more with a difficult problem.

Nevertheless, the increase of naval work has done something to alleviate the position and will continue to do so for some time longer. The aggregate volume of merchant and warship work, if considered from the point of view of their true value to the shipyards, rose to a peak rate of output per annum of 1,750,000 gross tons in December, 1937. Since then it has steadily declined. At the end of April, 1938, it amounted to about 1,500,000 gross tons. By the end of the year, making allowances for the 1938 naval programme not yet placed, the combined value as a rate of output

will be about 1,000,000 gross tons and will then begin to fall off fairly rapidly. Judging from conditions at the time of writing it seems probable that the volume of mercantile work at the end of the year will not exceed 500,000 tons.

It would appear therefore that the industry in this country has attained its peak, and at the present time is proceeding along a decline, which while it can be mitigated to some extent by an increase of naval work can be really checked only by an increase in the volume of orders for new merchant vessels. Even a considerable increase of naval work, beyond that at present contemplated, would not greatly alter the position. Naval work is, in fact, confined to a limited number of firms who alone in the industry have the equipment, the experience, and the trained labour required for warship construction.

The prosperity of the shipbuilding industry is, of course, dependent on that of the shipping industry. The diminution in the volume of orders for new ships can therefore be explained only by a study of shipping during the last few years and the reader is therefore referred to the section on that industry in this volume.¹

It is sufficient here to point out that the main reasons are the considerable fall in shipping freights which according to the index² of the Chamber of Shipping were 172.2 in September, 1937, and had fallen to 118.8 by December, and the fact that the political situation abroad was a little easier than it had recently been. During the boom in freights in 1937 the values of merchant ships rose rapidly. In many cases new ships were sold by their owners at prices much higher than they had paid to the builders. But with the fall in freights values fell rapidly and would-be buyers waited. The volume of tonnage laid up in port again began to rise. In July, 1932—the worst year—853 ships of a total net tonnage of 2,196,140 tons were laid up in ports of the United Kingdom. In July, 1937, the number had fallen to 47 and the net tonnage to 61,225. In April, 1938, the number had increased to 190 and the net tonnage to 339,325 tons.

The one thing that would restore the shipbuilding industry,

¹ "The Shipping Industry," pp 325-338

² 1929 = 100.

both in this country and abroad, to something like its former prosperity would be a restoration of international trade, but of that, though there are a few encouraging signs, there is no immediate prospect. Until this happens the industry will continue to suffer from having a total capacity in excess of current requirements.

The position of labour in the industry was discussed at length in *Britain in Depression*.¹ It was shown there that the workmen in the shipbuilding industry had suffered at least equally with the employers in the depression of 1931-4. During the war and the immediate post-war years large numbers of men and boys were attracted to the industry, only to find in the decline of the next ten years that much of this labour was not required. The surplus of labour was even more marked than the surplus of building berths. Many of the more able and mobile workers drifted away to other industries or gave up their craft and became general labourers. The migration was considerable. In July, 1923, according to the returns of the Ministry of Labour, there were no less than 269,970 workers (265,970 male and 4,000 female) shown as belonging to the shipbuilding and ship-repairing industry in Great Britain and Northern Ireland. In July, 1929, the number so registered had fallen to 204,500 (201,430 male and 3070 female), and in July, 1935, the number had fallen still further to 157,230 (154,710 male and 2520 female). This was the lowest point, though for female workers 1934 with 2240 was the lowest year. In July, 1937, there were 172,810 workers of whom 169,930 were male workers and 2880 female, so that some 15,500 former or new workers had been drawn into the industry. The complete table for the years 1923 to 1937 is given in Table D (p. 358).

Yet in spite of a loss to the industry of one-third of its workers (about 88,000), the intensity of unemployment among the remaining workers was very high. In June, 1931, the percentage unemployment was 56.6, in 1932 62.9 per cent, in 1933 61.1 per cent. In certain months the percentage unemployed rose to 76.8 on the Clyde and 77.2 on the north-east coast.

With the improvement in the shipyards in 1935 the numbers

¹ Pages 255-6.

TABLE D
SHIPBUILDING AND SHIP REPAIRING IN GREAT BRITAIN AND NORTHERN IRELAND

Year	No of Insured Workpeople in the Industry in July each Year			Percentage of such Workpeople Unemployed in June each Year
	Male	Female	Total	
1923	265,970	4000	269,970	44.1
1924	250,800	3430	254,230	27.4
1925	236,770	3350	240,120	32.9
1926	219,750	3350	223,100	39.4
1927	212,660	3370	216,030	23.0
1928	199,170	3260	202,430	26.5
1929	201,430	3070	204,500	22.5
1930	201,530	3190	204,720	30.7
1931	192,400	2990	195,390	56.6
1932	179,120	2810	181,930	62.9
1933	166,980	2330	169,310	61.1
1934	156,550	2240	158,790	49.1
1935	154,710	2520	157,230	43.1
1936	159,250	2000	161,850	29.8
1937	109,930	2880	112,810	24.4

These figures relate to persons of 16 years of age and over

These figures relate to persons between the ages of 16 and 64 (inclusive)

unemployed diminished. In that year the percentage in June was 43·1, in 1936 29·8, and in 1937 24·4. Compared with the average percentage of unemployment in all industries considered together (10 per cent in June, 1937) these figures are still very high. Nevertheless there has been from time to time in the course of the last two years a shortage of shipyard workers. Though the trade unions have in most cases denied there has been any shortage and have pointed to the numbers of unemployed workmen on their books, as well as to the published statistics of the Ministry of Labour, it is probable that an explanation of the paradox is to be found in the fact (1) that a disproportionate number of the unemployed workers are shipyard labourers and not skilled craftsmen, (2) that a number of the unemployed craftsmen have been so long out of work that they are unable to return to their trade without some kind of "refresher" course, and (3) that the requisite proportions of the different kinds of skilled workers required in a shipyard have become upset during the depression and stand in need of re-adjustment to modern needs.

Of course, a figure of 24·4 per cent unemployed in June does not mean that a quarter of the workers are surplus to the requirements of the industry, since many would only be temporarily unemployed at the time of the count, and would return to employment later. Nevertheless, it is true to say that a certain proportion of the 42,000 workers then unemployed will not regain their position in the industry. Such men are eventually re-classified at the employment exchanges and so gradually drop out of the industry. Scaling down is therefore just as wasteful a process for the labour in the industry as it is for its capital equipment.

BIBLIOGRAPHY

The chief and most accessible sources of information in regard to shipbuilding are the publications of Lloyd's Register of Shipping on which most of the information contained in this chapter is based. The chief of these publications are (1) the quarterly returns published in March, June, September, and December each year, (2) the Annual Summary of the Mercantile Shipbuilding of the world, published in January each year; (3) Annual Report of the Society's operations, published in September each year, and (4) Lloyd's Register Book and Statistical Notes thereon.

Further information can be obtained from the memoranda and

statistics circulated periodically by the Shipbuilding Employers' Federation and the Shipbuilding Conference. Information on the labour aspect of the industry can also be obtained from the trade unions associated with the industry.

A third source of information is furnished by the technical Press, such as *The Times Trade and Engineering Supplement*, the trade reviews of such newspapers as the *Glasgow Herald* and the *Yorkshire Post*, *Fairplay*, *Shipbuilding and Shipping Record*, *The Shipbuilder and Marine Engine Builder*, *The Shipping World*; *Syren and Shipping*, *Lloyd's List and Shipping Gazette*, and the Shipbuilding and Engineering Supplement of the *Journal of Commerce* (Thursday Edition).

It is essential that the student of shipbuilding should consult these sources of information if he is to get the right background for a correct interpretation of the statistics of the industry.

THE IRON AND STEEL INDUSTRY

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THE IRON AND STEEL INDUSTRY

I. INTRODUCTORY

IN *Britain in Depression* the memorandum on the iron and steel industry drew attention to the extreme sensitiveness of the industry to changes in business conditions and traced briefly the post-war history of the industry in the pre-depression years from 1918 to 1929 and during the depression period to the early summer of 1934. The view was then expressed that as far as the iron and steel industry was concerned the worst of the depression was over by the spring of 1933. There is now no doubt that this was so. From the autumn of 1931 until the spring of 1933 the British iron industry was operating at a lower level of activity than at any time since 1858, with the exception of the strike years of 1921 and 1926. In the case of steel making the volume of output in 1931 and 1932 was lower than in any year since 1904, again excepting the years 1921 and 1926. Production both of iron and steel has increased steadily from the depths of the depression to new high levels, which, in the case of steel, have never previously been exceeded in the history of the industry.

In a review of the development of the iron and steel industry in the years since the depression it is possible to distinguish two broad periods. First, the interval from the autumn of 1932 until the end of 1935 may be regarded as a period of gradual recovery to the level of activity of the pre-depression boom year of 1929; and, second, there is no doubt that the next two years 1936 and 1937 have constituted a boom period of record activity for the British iron and steel industry as a whole. It may be useful, therefore, to examine separately the position of the industry in these two periods. To facilitate the narrative and to make easy comparison with the history of the industry in the earlier post-war period, the sequence of events in the industry will be traced under the five main topics discussed in the previous memorandum, namely, production, overseas trade, employment and unemployment, prices and reorganization.

II. THE IRON AND STEEL INDUSTRY IN RECOVERY 1933-5

PRODUCTION The production of iron and steel in Great Britain reached the pre-depression post-war maximum in 1929. The output of pig-iron in that year was 7·6 million tons and the output of steel 9·6 million tons. Monthly output reached a peak in October, when 689,000 tons of pig-iron and 890,000 tons of steel were produced. From that date production declined until the output of iron reached the low level of 3·6 million tons in 1932 and that of steel 5·2 million tons in 1931 and 5·3 million tons in 1932. Monthly output of iron was a minimum (248,000 tons) in September, 1931, and of steel a minimum (357,000) in August, 1931. Production both of pig-iron and steel continued at a very low level throughout 1932, a year which may be regarded as one of stable production at a low level of output. The protective tariff on imports of iron and steel imposed in April, 1932, did not check the downward movement immediately, but by the autumn its stimulus to home production was becoming evident. In the early months of 1933 the monthly output of iron and steel began to rise above the levels of the monthly output of the two preceding years, and from that time onward recovery was under way

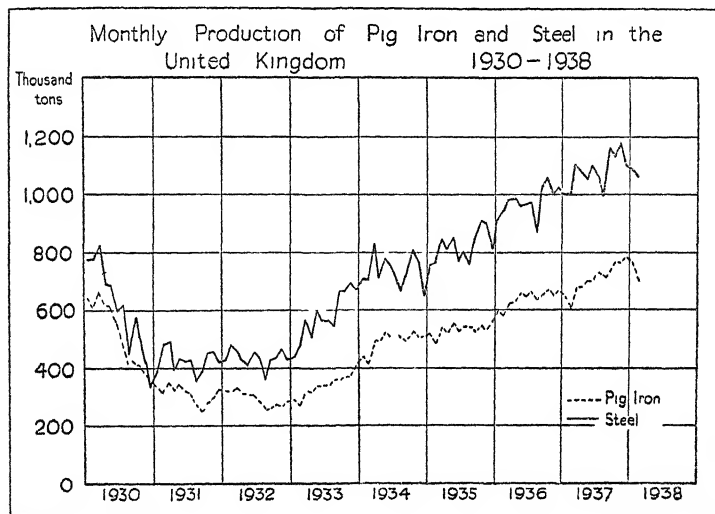
TABLE I
PRODUCTION OF PIG-IRON AND STEEL IN THE UNITED KINGDOM

Year	Pig-iron (Million tons)	Steel (Million tons)
1929	7·6	9·6
1930	6·2	7·3
1931	3·8	5·2
1932	3·6	5·3
1933	4·1	7·0
1934	6·0	8·8
1935	6·4	9·8
1936	7·7	11·8
1937	8·5	13·0

Table I shows that by 1935 the volume of steel production rose to just above the 1929 level, and that in 1936 pig-iron production had also exceeded the 1929 output. The progress of the industry from the depths of the depression in 1931 and 1932 to the boom conditions of 1936 and 1937 is revealed even more

strikingly in the chart below, which is based upon the figures of monthly production of pig-iron and steel given in Tables A and B of the Statistical Appendix. Inspection of the chart shows that a definite upward tendency began in the early months of 1933.

OVERSEA TRADE. The external trade in iron and steel has increased considerably from the depression level but it has not been free to return to the 1929 level. As the Import Duties



Advisory Committee has pointed out in the Report on the Present Position and Future Development of the Iron and Steel Industry¹ the average annual imports in the four years (1933 to 1936) following the imposition of a protective tariff were less than half the average annual volume of imports in the four years preceding the tariff. In the case of the export trade in iron and steel products of home manufacture the most obvious feature revealed by the data of Table II is the decline since 1929.

The entire external trade in iron and steel is now regulated by agreement with the Continental Steel Cartel and by a series of subsidiary agreements with non-Cartel countries and with various international cartels in the tin-plate, rail, and tube

¹ Cmd 5507, 1937, p 17

TABLE II
IMPORTS AND EXPORTS OF IRON AND STEEL

Year	Imports (Million tons)	Exports (Million tons)
1929	2 8	4 4
1933	1 0	1 9
1934	1 4	2 3
1935	1 2	2 4
1936	1 5	2 2
1937	2 0	2 6

making section of the industry.¹ The regulations governing the import of iron and steel products into the United Kingdom have been frequently modified in order to meet changing circumstances in the home market. But there is no need for the purpose of this memorandum to trace in detail the complex changes of tariff, quota, and licence regulations during the brief history of protection of the iron and steel industry.

EMPLOYMENT AND UNEMPLOYMENT. The steady improvement in activity from 1933 onwards has been reflected in an increase in the number of persons employed in the principal divisions of the iron and steel industry and in the closely related industries of iron-ore mining, coke making, and the mining of coking coal. An examination of the Unemployment Insurance statistics shows the great improvement in the employment position compared with 1932. Table C of the Statistical Appendix sets out the estimated number of insured persons aged 16-64 who were actually in work at the middle of the year in various years between 1929 and 1937. The classification in the table includes (1) Iron-ore and Ironstone Mining, (2) Coke Ovens and By-product Works, (3) Pig-iron Manufacture (Blast Furnaces), (4) Steel Melting and Iron Puddling, Iron and Steel Rolling, etc., (5) Tin-plates, and (6) Iron and Steel Tubes. Unfortunately it is not possible to include an annual estimate of the number of persons employed in the mining of coal to meet the needs of the iron and steel industry. Accordingly the table under-estimates to some extent the indirect increase in employment due to the improvement in the position of the iron and steel trades. On the other

¹ Cmd. 5507, 1937, pp. 20-22.

hand, the group Coke Ovens and By-product Works includes workers engaged in the production of coke and by-products not directly demanded by the iron and steel industry. On the whole the statistics of the number of persons in employment in the various divisions of the iron and steel and related industries provide a reliable indication of the minimum expansion in the volume of employment in these trades. The aggregate volume of employment in the six divisions of the industry is shown in Table III.

TABLE III
THE AGGREGATE VOLUME OF EMPLOYMENT IN SIX PRINCIPAL DIVISIONS
OF THE IRON AND STEEL INDUSTRY, 1929-37 ¹

Year	Estimated Number of Insured Persons in Employment
1929	239,370
1932	144,073
1933	165,894
1934	203,557
1935	200,291
1936	225,126
1937	257,565

In 1935 there were 200,000 insured persons in employment compared with 144,000 in 1932. It is worth noticing that the output of steel in 1935 was 200,000 tons greater than in 1929, but the number of persons employed in the steel melting and iron and steel rolling section of the industry was 20,000 less. On the other hand, pig-iron production was still 1,200,000 tons below the 1929 level. But since the number of persons employed in the blast-furnace division of the industry is a relatively small proportion of the total (8 per cent in 1929 and 6 per cent in 1935), and since the output of iron can be considerably increased with a relatively small addition to the work-force, the fact that the output of pig-iron did not reach the 1929 level in 1935 does not invalidate the view that in 1935 the iron and steel industry as a whole had quite regained its pre-depression level but, as a result of technical improvement and reorganization, with a diminished total working personnel. This view is confirmed by the fact to

¹ See Table C of the Statistical Appendix for details

be emphasized in the next section that in 1936 the production both of pig-iron and steel was in excess of the 1929 output but the number of insured workers in employment in the six principal divisions of the industry was 14,000 less than in 1929.

Turning next to unemployment, Table IV shows the position in 1929 and in depression and recovery

TABLE IV
NUMBER OF INSURED PERSONS RECORDED AS UNEMPLOYED IN THE
SIX PRINCIPAL DIVISIONS OF THE IRON AND STEEL INDUSTRY,
1929-37¹

Year	Number of Persons Recorded as Unemployed
1929	48,790
1932	124,927
1933	96,586
1934	63,953
1935	61,609
1936	44,645
1937	28,485

Despite the recovery there were about 13,000 more persons unemployed in the British iron and steel industry in 1935 than in 1929. Although the volume of steel produced in 1935 was 9.8 million tons compared with 9.6 million tons in 1929, the number of insured persons unemployed in the steel melting and iron and steel rolling division of the industry was fully 3000 greater and, as we have seen, the number in employment approximately 20,000 less. Steel melting and iron and steel rolling and the manufacture of tin-plates account for a large proportion of unemployment in the industry.

PRICES AND FINANCE. Prices of iron and steel products have moved steadily upwards in every year since 1932. The Board of Trade's revised series of index numbers of wholesale prices show that on the base year 1930 = 100 the iron and steel price index, which includes thirty-seven items, was 100.5 in 1935, i.e. had more than regained the 1930 level, but had not quite reached the level of prices that had prevailed during 1929. But whereas the iron and steel price index was slightly above the 1930 level,

¹ See Table D of the Statistical Appendix for details

the general wholesale price index was still considerably below the 1930 level (89.0 in 1935). The strengthening of the prices of their products together with an increase in the quantity of iron and steel sold improved the financial position and prospects of most firms in the industry. In consequence there was a marked rise in the market value of iron and steel company shares.

The price policy to be pursued by the industry has been the subject of frequent comment by the Import Duties Advisory Committee in its reports and recommendations as to the duties on iron and steel. The main drift of its view has been to emphasize the importance of a moderate and stable price policy. The British Iron and Steel Federation has accepted this view but with the concurrence of the I.D.A.C. has interpreted it broadly as a policy of basing selling prices on ascertained costs of production. A discussion of the merits and limitations of this policy is, however, beyond the scope of this memorandum.

REORGANIZATION AND EFFICIENCY. In *Britain in Depression* the history of the reorganization of the iron and steel industry was reviewed at some length. Since then the most important developments in organization have been the appointment early in 1935 of an independent Chairman of the British Iron and Steel Federation and the formation by the Federation in the same year of the British Iron and Steel Corporation as a limited liability company to carry out all purchases and resales of material imported under the agreement with the Continental Steel Cartel, and to act as an instrument available to the whole trade for the centralization of export sales. The organization previously operated by the British Steel Export Association has provided the nucleus of the export department of the Corporation. The British Iron and Steel Federation has now been made into an effective instrument for maintaining the "quasi-monopolistic" position which the industry has attained since 1932.

The scientific and technical efficiency of the industry has been steadily improved. Research is proceeding on an extensive scale both by individual concerns and on a co-operative basis, and large additions to plant and equipment have been made as a result of the more favourable financial circumstances of the industry in the past few years.

III. THE IRON AND STEEL INDUSTRY IN THE BOOM, 1936-7

From every point of view the years 1936 and 1937, and particularly the latter year, constituted a period of boom activity unique in the history of the British iron and steel industry. In no previous year, not excepting the peak years of war-time expansion in steel production, has the output of steel from British furnaces equalled the record-breaking outputs of 1936 and 1937. The output of pig-iron increased to 7.7 million tons in 1936 and 8.5 million tons in 1937, while production of steel surpassed all previous records at 11.8 million tons and 13.0 million tons in these years.

TABLE V
INDICES OF ACTIVITY IN THE IRON AND STEEL INDUSTRY
(1930 = 100)

	1929	1930	1936	1937
Pig-iron Production	122	100	125	137
Steel Production	132	100	161	177
Home Consumption of Iron and Steel ¹	115	100	148	168
Employment . . .	112	100	105	121
Prices ² . . .	101 ³	100	106.6	129.6

¹ The *Economist* index of Consumption of Iron and Steel converted to 1930 base

² Board of Trade index

³ Estimated

Some indication of the extent of the boom is given in the indices of activity shown in Table V. Output, home consumption of iron and steel, the volume of employment, and prices all rose markedly above the levels of 1929 and 1930. Iron and steel prices in 1937 showed a greater rise above the 1930 level than that of any other industrial group,¹ while the domestic consumption of iron and steel was half as great again as it had been in the pre-depression boom year of 1929. The process of scrapping and reconstructing the older plant and of extending large-scale integrated works proceeded rapidly. Steel furnace capacity has been increased from 11 million tons in 1929 to 13.5 million tons at the end of 1937

¹ *Board of Trade Journal*, 13th January, 1938.

and is estimated to amount to 14 million tons at the end of 1938. Some £20 million was spent by the industry in 1936 and 1937 on new and reconstructed furnaces and mills and the work of extension and re-equipment is still proceeding upon large projects in South Wales, on the Clyde, in Lincolnshire, and elsewhere.¹ Thus in the iron and steel industry there is every evidence that 1936 and 1937 were years of boom.

IV. CONCLUSION—THE FACTORS IN RECOVERY

The quite remarkable expansion in iron and steel production which has occurred since 1932 is attributable to three broad sets of factors, namely, normal economic recovery following a slump and depression, the protective tariff on iron and steel products, and the rearmament programme. It is not easy to assess quantitatively the effect of these factors. Nevertheless, some estimate, however approximate, is worth attempting, especially for the past two years of boom conditions.

First in importance is the revival of normal business conditions. A reasonable estimate of the volume of steel production which it would have been possible to anticipate in the absence of protection and rearmament is provided by the volume of output in 1929—the best pre-depression post-war year. On this basis recovery might have been expected to increase steel production in a good post-depression year to about 9.5 million tons.

The effect of the tariff is more difficult to estimate, but a guess may be attempted. The average annual imports of iron and steel into the United Kingdom for the five pre-tariff years 1927–31 amounted to 3.2 million tons and in the five post-tariff years 1933–7 to 1.4 million tons. The tariff, therefore, may be said to have excluded 1.8 million tons of iron and steel products annually on the average. At the same time, however, exports of iron and steel also declined from an average annual amount of 3.6 million tons in the earlier quinquennium to 2.3 million tons in the later five year period, i.e. by an average annual amount of 1.3 million tons. Thus the net quantitative effect of the tariff is likely to have been considerably less than would appear at first sight, and may be very roughly put at half a million tons per annum. Adding

¹ *Board of Trade Journal*, 6th January, 1938

this amount to the 9.5 million tons previously arrived at gives a figure of 10 million tons as an estimate of steel production in a good year behind a protective tariff

Output of steel in 1936 amounted to 11.8 million tons and in 1937 to 13.0 million tons. The difference of 1.8 million tons in the earlier year and 3 million tons in the later year may therefore be attributed to the rearmament programme. It is interesting to observe that a rough confirmation of this estimate is provided by the output of 9.8 million tons in 1935, the year which preceded the beginning of effective rearmament

Three closely related problems are likely to confront the British iron and steel industry in the future. In the first place, the recent great increase in steel-making capacity may prove financially embarrassing once the rearmament programme has been completed and recession from the peak production of 1937 begins. Secondly, the restoration of the volume of export trade is imperative if output is to be kept close to productive capacity. But the revival of international trade in iron and steel is seriously hindered, on the one hand, by present international economic policy and, on the other hand, by the restrictive effect upon the volume of British iron and steel exports of the working of the agreement with the Continental Steel Cartel in conjunction with a policy of limitation of iron and steel imports into this country. Thirdly, the effectiveness of the quasi-monopolistic reorganization of the industry will be subjected to test by the recurrence of depression following a great extension in steel-making capacity.

STATISTICAL APPENDIX

TABLE A

MONTHLY PRODUCTION OF PIG-IRON IN THE UNITED KINGDOM, 1929-38
(Nearest Thousand Tons)

Year	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
1929	564	520	591	611	655	658	672	682	665	689	631	643
1930	650	607	666	620	615	563	486	417	425	415	384	350
1931	337	318	357	323	317	324	317	276	248	284	296	331
1932	330	324	336	317	315	311	293	259	260	276	268	285
1933	287	271	332	325	340	346	344	363	360	373	375	409
1934	441	414	504	496	528	515	528	503	500	527	508	514
1935	521	483	554	526	559	529	547	543	530	544	530	559
1936	596	585	634	630	661	641	666	636	651	670	643	671
1937	651	604	680	681	696	699	729	714	727	770	762	784
1938	761	693	715	661								

TABLE B
MONTHLY PRODUCTION OF STEEL IN THE UNITED KINGDOM, 1929-38
(Nearest Thousand Tons)

Year	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
1929	765	775	860	809	844	831	805	753	818	890	815	661
1930	771	776	826	696	692	600	621	451	581	513	434	337
1931	402	486	500	397	435	429	429	357	401	457	459	445
1932	430	481	463	433	417	459	438	362	430	410	474	430
1933	444	483	578	510	600	569	568	551	669	668	695	669
1934	711	708	835	717	780	758	718	667	735	812	766	655
1935	758	770	842	809	853	770	803	760	856	907	903	812
1936	912	939	980	984	963	966	974	873	1027	1061	1001	1019
1937	999	996	1110	1080	1047	1106	1059	988	1163	1134	1178	1104
1938	1081	1058	1116	939								

TABLE C
ESTIMATED NUMBER OF INSURED PERSONS AGED 16-64 IN EMPLOYMENT
IN THE PRINCIPAL DIVISIONS OF THE IRON AND STEEL INDUSTRY IN
GREAT BRITAIN AND NORTHERN IRELAND, MID-YEAR 1929-37¹

Division	1929	1932	1933	1934	1935	1936	1937
Iron-ore and Iron-stone Mining	14,089	7,005	6,005	8,953	7,906	9,450	10,375
Coke Ovens and By-product Works	10,696	7,523	8,597	10,551	11,971	12,196	13,049
Pig-iron (Blast Furnaces)	19,737	10,411	9,579	12,480	12,618	13,794	15,750
Steel Melting, etc.	144,290	86,927	100,966	127,476	123,992	144,014	163,687
Tin Plates	24,057	15,872	21,730	19,896	18,006	19,183	24,884
Iron and Steel Tubes	26,501	16,335	19,017	24,201	25,798	26,689	29,820
TOTAL	239,370	144,073	165,894	203,557	200,291	225,126	257,565

TABLE D
NUMBERS OF INSURED PERSONS RECORDED AS UNEMPLOYED IN THE
PRINCIPAL DIVISIONS OF THE IRON AND STEEL INDUSTRY IN GREAT
BRITAIN AND NORTHERN IRELAND, MID-YEAR 1929-37²

Division	1929	1932	1933	1934	1935	1936	1937
Iron-ore and Iron-stone Mining	881	5,375	5,195	2,797	2,834	1,541	885
Coke Ovens and By-product Works	1,324	4,067	3,623	2,109	2,349	1,954	1,701
Pig-iron (Blast Furnaces)	2,333	7,669	6,621	3,890	3,512	2,276	1,550
Steel Melting, etc.	34,430	80,833	63,701	40,564	37,878	25,946	18,213
Tin Plates	7,223	14,848	8,380	9,024	10,244	8,227	3,246
Iron and Steel Tubes	2,599	12,135	9,063	5,269	4,792	4,701	2,890
TOTAL	48,790	124,927	96,586	63,953	61,609	44,645	28,485

¹ Ministry of Labour Gazette.² *Ibid*

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THE ENGINEERING TRADES

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THE ENGINEERING TRADES

IN this portion of the examination of the metal trades attention swings away from sections which may be termed "metal manufacture" to those which may be regarded as constituting the engineering trades, broadly defined. A basis for examination is to be found in the categories used in the publications of the Ministry of Labour, namely, "Engineering," consisting of General Engineering, Electrical Engineering, Marine Engineering, and Constructional Engineering, "Construction and Repair of Vehicles," consisting of Motor Vehicles, Cycles and Aircraft, Carriages and Carts, and Railway Carriages, Wagons, and Trams, and, thirdly, the larger, more assorted group, "Metal Trades," including, amongst a total of nine separate categories in all, such widely different activities as electrical wiring and contracting, the making of electric cable, apparatus, and lamps, the manufacture of hand tools, cutlery, saws, files, bolts, nuts, rivets, heating and ventilating apparatus, watches, clocks, plate and jewellery. Not all, it is true, could be classed strictly as engineering trades, and not all work exclusively with metals, but completely rigorous definition of engineering would most certainly lead to too small a grouping to satisfy the requirements of the scope given to this memorandum as a whole. As it is, it excludes shipbuilding and ship-repairing, which have greater claims upon inclusion than, say, the making of carriages and carts, but the justification for its exclusion is that its importance and its special problems have seemed to demand separate treatment elsewhere. In view of this it may seem strange that electrical engineering and motor vehicles, cycles and aircraft are included in this list above for they, too, are given separate treatment elsewhere in this survey. It is intended to give, however, only certain figures relating to employment and unemployment so that tables covering these matters for all the trades as a whole may not present a gap. Detailed comment upon their position is not attempted.

I

The first approach to an understanding of the position of these trades during, broadly, the present decade, may be made by displaying the figures relating to them which are published by the Ministry of Labour, giving the number of persons insured in each, as estimated in July of each year, and the number of insured persons estimated to be employed in each in June of each year. The data for the number insured are given in the November (1937) issue of the *Ministry of Labour Gazette*, and the data for the number of insured employed in the December (1937) issue. They are presented in massed form in Table I in the Appendix. The first impression may be that it gives considerably more than is demanded by the general title of this survey. It goes back in its run of years to as far as 1929, and it includes figures which refer to years as remote as 1927 and 1923. The purpose of the former is that the years of greatest depression may be clearly discerned and the slope of recovery thereby the better appreciated, and the purpose of the latter is that the nature of the index numbers in terms of which the recovery movement is presented may be fully understood. It seems reasonable to preserve the actual form and sequence of the official figures, but to do so carries with it the requirement that it be made clear that the base year to which they refer is 1923 and that there is interposed in 1927 a change in the method of calculation having a certain influence upon the height at which the later figures run.

Certain broad features may first be noted. As measured by the numbers of persons insured most trades increased in size over the period 1929 to 1937. Exceptions to this general rule are found in Marine Engineering, Carriages and Carts, Railway Carriages, Wagons and Tramcars, Hand Tools, etc. (roughly the same), and Watches, Clocks, Plate and Jewellery. Most of the expanding trades reached their 1937 level, however, only through a phase of contraction. For some the dip was steep, for others, for example, Electrical Engineering, Constructional Engineering, Stove, Grate, Pipe and General Iron Founding, and Heating and Ventilating Engineering, it was no more than an almost imper-

ceptible check. Trades in which no contraction at all was experienced were Motor Vehicles, Cycles and Aircraft, Electrical Wiring and Contracting, and Electric Cable, Apparatus and Lamps, though the first-named remained at a stationary level during 1931 and 1932. Such divisions amongst the trades might well supply the basic material for a study specifically entitled "the old trades and the new." In the broad sense full recovery would seem to have been made by 1937, but, true to their characteristics, they displayed a diversity of movement and differences in degree of movement which baffle general statement and compel recourse to comprehensive tabulation.

A stronger test, however, is the picture as disclosed by the movements of the index numbers showing the variation in the numbers of persons estimated to be employed. The only sections in which the numbers for 1937 are estimated to be smaller than those for 1929 are Marine Engineering, Carriages and Carts, Railway Carriages, Wagons and Tramcars (but by merely a trifle), and Watches, Clocks, Plate and Jewellery. In only Carriages and Carts, however, is the gap considerable: except for reasons of strict accuracy Railway Carriages, Wagons and Tramcars might be regarded as having regained their 1929 level, while for Marine Engineering, despite the emphatic steepness of its decline in the intervening period, the gap was not considerable and would seem to be rapidly closing. Some trades, notably Electrical Engineering, Constructional Engineering, Motor Vehicles, Cycles and Aircraft, Electrical Wiring and Contracting, Electrical Cable, Apparatus and Lamps, Heating and Ventilating, and the metal trades not separately specified, register considerable expansion, and the suggestion of an underlying division into new trades and old is again conveyed. Examination of these figures leaves undisturbed at any rate the generalization which rounded off the examination of the figures showing the movement of the insured.

With this as a background attention may now be focused upon the dates at which the beginning of the recovery movement may be placed. The data for this examination are provided by the index numbers showing the numbers estimated to be employed. Not all trades move together, nor do they all move with the same

speed towards the higher level of 1937. The edge of their advance is therefore not smooth and even, but toothed and broken. For this reason it has been thought most serviceable to present that movement in a general table which will indicate its diversity and at the same time bring out the various time spans involved from the first break-through of the recovery phase to its arrival at a strictly significant level. An argument may perhaps be developed first, however, which shows the need for careful interpretation of the position. The lowest level of employment as estimated for General Engineering was recorded in the year 1932. The next year registered an improvement upon this figure, but by one point only, and for practical purposes it would seem to be perfectly reasonable to regard 1933 as being fully as much depressed as 1932. Against this conclusion two sets of arguments range themselves, one statistical in character, and the other based upon the views expressed in various trade journals concerning 1933. The statistical argument is that the figure for 1933 represents the reversal of the former downward trend: it is the first appearance in statistical form of a significant change of phase, and it is open at the same time to the charge that since it indicates, by reason of the method of calculation employed, what the position is as early in the year as June it may miss changes, possibly important, taking place in the second half of the year. This last suspicion seems to be supported by the trade views expressed and by the trend of the quarterly percentages of unemployment in General Engineering. The quarterly unemployment percentages continue to run at a high level throughout 1933 but it is important to note that, while the high figure of the third quarter of 1932 (30·8 per cent) had only given way to the figure of 28·6 per cent, a still high level, in the first quarter of 1933 the figures for the remaining three quarters were 25 per cent, 23·2 per cent and 20 per cent respectively.

In its issue of 5th January, 1934, *The Engineer* thought it reasonable to describe the year 1933 as "the first year of industrial convalescence," and the *Economist* in its "Commercial History of 1933" declared that "the past year has witnessed a substantial improvement in the British Engineering industry." In its survey of engineering it quoted from the annual survey of

the *Chamber of Commerce Journal* to the effect that demolition of old plant was developing and that the re-equipment orders thereby necessitated were having beneficial consequences for engineering. "Reports of the extension of engineering works and the erection of new ones continue to come in" it was stated, "especially from Birmingham, Derby, Hull and, for minor industries, from the west of London." To such optimistic statements there may be added that of *The Engineer* in January, 1933, viewing the year's prospects: "Economic conditions remain against enterprise in which the resources of civil engineering and affiliated branches of structural and mechanical engineering could be employed. Nevertheless, the reduced value of money is suggesting the re-examination of many schemes which have been shelved for varying lengths of time," and another, from *The Engineer* for January 5th, 1934, surveying the year's achievements: "Early in the summer it became clear that orders which for a long time had been only in the air were beginning to settle and when September arrived there remained little doubt that an improvement had begun." Business men's expectations were clearly rising and the accumulation of cheap funds provided an easy fluid for their movement towards realization. Nevertheless, the atmosphere was still largely that of expectation and the view was towards the future. The frequently expressed opinion that in the absence of untoward events, such as labour troubles, unwanted legislation, and mishaps in foreign relations, recovery should develop seems to justify this interpretation. It is at any rate clear that the 1933 index number of insured employed must be considerably supplemented. The relationship of the various elements in the argument is complementary rather than contradictory and with such cautions in mind the table based on the Ministry of Labour's figures may perhaps be left to give at any rate the anatomy of the situation.

Two movements are noticed, the first that of recovery from the lowest estimate of employment recorded, marked by the sign A' where it is slight and by the sign of B where it is fairly considerable, and the second that of continuation of a recovery movement which begins by being slight and is then continued more strongly. This is marked by progression to the sign B

COMPARATIVE TABLE OF MOVEMENT IN CERTAIN ENGINEERING TRADES
FROM YEAR OF STEEPEST DEPRESSION TO A SIGNIFICANT
STAGE OF RECOVERY

	1930	1931	1932	1933	1934	1935
General Engineering			A	A'	B	
Electrical Engineering				A	B	
Marine Engineering			A	A'	B	
Constructional Engineering			A	A	B	
Motor Vehicles, Cycles, and Aircraft			A	B		
Railway Carriages, Wagons, etc				A	B	
Stove, Grate, Pipe, and General Iron Founding			A	B		
Electric Cables, Lamps, Apparatus, etc		A	B			
Handtools, Cutlery, Saws, etc		A	A'	B		
Bolts, Nuts, Screws, etc		A	A	B'	B	
Brass and Allied Metal Wares		A	A'	A'	B	
Heating and Ventilating Apparatus			A	B		
Watches, Clocks, etc			A	B'	B	
Metal Trades not separately specified		A	A'	B		

A = lowest estimated employment

A' = improvement on A, but by no more than 5 points or less

B = first year after A to record 10 or more points improvement

B' = more than a 5 points but not as much as a 10 points rise

Carriages and Carts, Electrical Wiring and Contracting are omitted as being dominated by special circumstances, the first of decline, the second of advance, which make their inclusion in this table difficult

through the intermediary stage A'. For two trades, Bolts, Nuts, etc., and Watches, Clocks, etc., a further sign is used, namely, B'. This is used to indicate that the movement from A is rather more considerable than would justify the sign A', but not considerable enough to justify the sign B. Of the trades itemized—and it should be noted that two, Carriages and Carts, and Electric Wiring and Contracting, are omitted, the reason being that their movement has special characteristics which do not fit the table—six, Electrical Engineering, Motor Vehicles, Cycles and Aircraft, Railway Carriages and Wagons, etc., Stove, Grate, Pipe, etc., Electric Cable, etc., and Heating and Ventilating Engineering complete the move from A to B in one movement; four, General Engineering, Marine Engineering, Hand Tools, Cutlery Saws, etc., and Metal Trades not separately specified,

pass through the intermediary stage A', indicating that their first movement is relatively slight, Construction Engineering experienced two years at the "lowest" level of employment, and then proceeded, in 1934, to the stage of considerable recovery. Bolts, Nuts, Rivets, etc., also experienced two years of "lowest" employment and then proceeded to the stage of considerable recovery only after a further year at a slightly lower level. Brass and Allied Metal Ware experienced two years of slight recovery before achieving the stage of considerable recovery: while Watches, Clocks, etc., made fairly considerable recovery in 1933 but did not reach the final stage till 1934. One general feature however stands out. Whatever may be the disparities of movement displayed no trade remained below the level of considerable recovery, as defined, after 1934. Much leeway no doubt remained to be made up, but the turning point had been passed, and a certain degree of momentum in an upward direction would appear to have been gained.

These conclusions may be checked by reference to the trends revealed by the figures showing the percentages of workpeople unemployed in each of these trades. The figures are presented in Table II of the Appendix. Unemployment percentages do not, it is true, supply a perfectly safe guide to the fortunes of an industry, for an improved percentage figure could result either from a reduction in the number estimated to be insured in that industry, with the numbers actually employed remaining the same, or from an improved tone in the industry bringing more workpeople back into employment, or, at some stages, a combination of both causes. Thus percentages of unemployment should not be pressed too closely, but it may be taken for granted at the same time that the trend they reveal has valid enough broad reference to the situation. It is in this belief that the ensuing argument is developed. A further introductory point, however, may perhaps be made. The figures in the table have been displayed in such a way that it may be clearly seen when a quarterly figure for any trade is greater or smaller than the quarterly figure for all trades and services taken together. When the figure is greater than the figure for industry as a whole it is printed in heavy type: when less, in normal type. Further, the heaviest

unemployment percentage immediately preceding a long term of diminishing unemployment is bracketed round so as to indicate from what quarter the trend is consistently that of improvement.

Two outstanding features then call for notice. The first is the massing of percentages of unemployment considerably higher than for industry generally in the period 1931-2, their falling-off through 1933 and 1934, their persistence in Marine and Constructional Engineering to the first quarter of 1936, and in the Hand Tools and Cutlery, etc., to the third quarter of 1936, with their complete absence, with one exception, Constructional Engineering in the third quarter of 1937, through subsequent quarters to the end of 1937. If the general percentage of unemployment be regarded as the pivot it is clear that the engineering trades have repeated the characteristic see-saw movement of the capital goods section of industry. Visited by unemployment to a degree greater than the average in the depression years they swing to an unemployment position of rather less than average intensity in 1935, and emphasize their steeper swing to recovery level in 1936 and 1937. It is too early in this examination to attempt to record the reasons which may be claimed to explain this movement, but it may be perhaps permissible to note that in the accentuation of the latter part of the phase, armament work, which may be regarded as a form of capital construction, has been an influence of considerable strength.

The second feature is the tendency of the percentages of highest unemployment, selected on the principle stated earlier, to mass themselves in the period extending from and including the second quarter of 1932 to the first quarter of 1933. This, together with the position indicated by the examination of the figures of the numbers of insured workpeople employed, would seem to provide a reasonable chance of specifying the quarter, or quarters, from which recovery may be dated. To achieve this result, however, it is necessary to take each of the leading trades in turn.

General Engineering experienced its highest unemployment percentage in the third quarter of 1932. From then onwards the trend of the unemployment percentages is progressively downwards: very slightly at first, with almost imperceptible improvement recorded, but to positions appreciably different from those

of 1932 by the middle of 1933. This movement requires cautious interpretation. A cast back to the trend of the insured and the insured employed shows that the improvement in the latter, between the middle of 1932 and the middle of 1933, was so slight as to be negligible and that the numbers insured did not show an increase until the middle of 1935. In the interim, however, between the middle of 1933 and the middle of 1934 to be precise, the numbers of insured employed rose considerably. On this basis it would seem best to place the recovery of General Engineering, not from that quarter in which it displays its highest unemployment percentage but from the early middle of 1933, at which period its unemployed percentage had dropped by a significant amount and from which the improvement was maintained with some consistency. Such a view is supported, it may be claimed, by the views of trade journals from which representative opinions have already been quoted and by the implications of the high unemployment percentages in the last quarter of 1932 and the first quarter of 1933. This, however, is admittedly to concentrate on the firmness of the recovery movement: if the stress must be laid on the period of change of phase, which is justifiable, for there is, after all, continuity of movement to be noticed, then the point of reference is the last quarter of 1932.

Marine Engineering presents a picture demanding equally cautious treatment. The highest unemployment percentage is to be found in the second quarter of 1932, and thereafter to the end of 1937 the trend is that of continuous decrease. The trend of the insured, however, imposes a check on the conclusions to which the trend of the unemployment percentages seems to point. According to this the decline in the size of the industry was checked in the period covered by the years 1933, 1934, and 1935, but it was not until 1936 that a significant improvement was registered. This however would put the recovery period as much too late as the former argument would lead to its being placed too early. The index of insured employed is perhaps a truer guide. The position disclosed by this is very slight improvement between 1932 and 1933 and distinct improvement between 1933 and 1934. A further glance at the unemployment percentages suggests that improvement entered a significant phase in

the second half of 1933 and became more pronounced still in the winter and spring of 1934. Reference to the position of shipbuilding and ship-repairing will perhaps support this view, though on the basis of tonnage launched and horse-power produced this support would seem not to be supplied, for in 1933 these two indices of activity touched their lowest. But this unfavourable verdict is countered, firstly by the reflection that they measure work which has been finished and give no indication of the work in hand, and secondly by the views expressed by trade journals about their position. Whilst stating that work in hand at the end of 1933 fell lamentably short of existing capacity there seems to be agreement amongst them that improvement had begun. The *Economist*, in its commercial history of 1933, wrote "During the past year the British shipbuilding industry has turned the corner of the worst depression of the century . . . nevertheless, prosperity is still a long way off." Mr. G. Tristram Edwards, President of the Shipbuilding Employers' Federation wrote in the *Glasgow Herald* Trade Review. "Whereas in 1932 work was proceeding on only 5 per cent of the building berths . . . by the end of June (1933) 20 per cent of the berths were occupied." Marine Engineering is a close associate of shipbuilding and ship-repairing and the healthier tone indicated for the latter in these quotations may be taken as broadly holding good for the former.

Constructional Engineering experienced two quarters at the same maximum unemployment percentage, the last quarter of 1932 and the first quarter of 1933. It entered on its first quarter of improvement with the second of 1933 and maintained this course with one check until the third quarter of 1937, when it experienced a slight rise in unemployment. The decline in unemployment was not pronounced, however, until the autumn and winter of 1933 and it is significant that the index of insured employed remained at the same level for 1932 and 1933. Trade reports tend to class 1933 with 1932 as a year of unfortunate experiences, and contain criticism of the steel maker who engaged also upon fabricated steelwork to the hurt of specialist structural engineers already hampered by insufficiency of orders. Such criticism may be taken as a function of depression affecting both

steel makers and structural engineers alike, though it has other important aspects as well. Trade reports of 1934, however, carry a vastly different impression. There seems to be general agreement that it had been a year of steady and encouraging improvement, though doubt was occasionally registered as to how far contracts had been upon an adequately profitable basis and fear expressed as to how far British engineers were adequately maintaining their export business. So far, however, as the objective of this survey is concerned, it may be laid down without qualification that 1934 was the first year of appreciable activity to be encountered since the lowest point of depression. With what quarter that recovery may be associated it is more venturesome to say than the nature of the statistics used in this argument will justify. *The Engineer* stated that more bridges had been built in 1933 than 1932, but Constructional Engineering is more than bridge-building, and the general tendency was to class 1932 as the worst year and 1933 as not much better. It was not until the trade surveys of 1934 began to appear in the early part of 1935 that a stronger and more optimistic tone was struck. A statement made in *The Engineer's* survey of 1934 in its issue of January 4th, 1935, will suffice to illustrate this. "The carrying out of public works during the year 1934 was," it was declared, "affected to some extent by the depression, but a number of works which had been temporarily postponed were put into execution and with the gradual return of prosperity more and more work was undertaken or planned as the year progressed." If attention is fixed on the use by writers on the trade of the phrase that 1932 was the worst year and 1933 not much better, then 1933, by however little, would seem to be the year in which the significant change of phase took place. If it be claimed that opinions of this sort tend to be broad in their nature, then it would seem to be correct also to point out that the average percentage of unemployment in Constructional Engineering was less in 1933 than in 1932, and that the last two quarters returned smaller figures than any returned since the last quarter of 1931. As the numbers estimated to be insured in this trade did not decline in 1933 as compared with 1932, some significance may be attached to such a movement of

the unemployment percentages 1933 would perhaps be best described as a year of vague stirrings which did not present themselves in an appreciable recovery *movement* until the more definite happenings of 1934

Of Motor Vehicles, Cycles and Aircraft, some details of which are found in another section, it is perhaps enough to state that its improvement, as measured by the run of unemployment percentages, begins in the last quarter of 1931, and is thereafter reasonably maintained, and that on the basis of the figures showing numbers insured and numbers estimated to be employed the industry shows no more than a slight check in 1932 and displays considerable vigour of expansion under both heads up to and including 1937. Indeed, in the last two years, 1936 and 1937, as might be expected from public decisions made concerning the aircraft industry, involving also the motor car industry, expansion was considerable. The figures associated with this memorandum, which make this movement perfectly clear, may perhaps be permitted to speak for themselves.

The same plea may perhaps be made in connection with the nine other trades for which figures are provided, and the broad issue left with the statement, made earlier, viz. that they are not perfectly smooth in their advance to prosperity, that 1933 stamps itself, broadly, as a year of stirrings and slight recovery, and that fuller and stronger recovery must wait until 1934. A short note should be added, however, on the position of the Machine Tool trade through this period. Its position is strategically important for it provides the instruments of production for those who are themselves producers of capital goods. It is not possible to provide separate statistics for them, and reliance must be placed upon the statements made in the trade surveys with which the various engineering journals usually open each year. The year 1933 was described generally as being one of continued difficulty, but with signs that encouraged the expectation of improvement. These signs seem to consist of a rather freer flow of inquiries and a tendency for firms needing capital equipment to move towards the making up of arrears which the earlier depression years had induced. One quite acceptable and understandable point made about the situation was that

1934 was hardly likely to display the same degree of second-hand buying as 1933 had seen by reason of sales by auction at engineering establishments that had been compelled to close down. The matter may perhaps be clinched by the statement contained in the *Glasgow Herald* Trade Review of December 29th, 1933: "There are manufacturers who think that concerns which have gone in for little capital expenditure in equipment within recent years will be compelled sooner or later to embark on a programme of replacements that will be essential for their work." Such a statement can explain much, for it is more than merely a statement about the machine tool trade. The reluctance of engineers earlier to buy machine tools may be taken as a sign of their depressed condition. Their greater readiness to do so towards the end of 1933, the expectancy that their demands would increase in 1934, may be read as a sign that, as an earlier argument suggested, 1933 was a year of observable stirrings, though hardly one of much appreciable advance in activity. The test is perhaps the position as reported in the machine tool section at the end of 1934 and the frame of mind with which they faced 1935. The test appears to work satisfactorily. 1934 was reported to have brought a welcome improvement, to have been distinctly better than the previous year, and 1935 was being faced with much greater expectancy on the grounds that industries such as shipbuilding had shown some improvement, that there had been a distinct shrinkage in the market for second-hand machine tools, and that machine tool makers had a pleasing amount of work on hand with a fair quantity of inquiries which were anticipated to harden into orders without much difficulty.

If the position of the machine tool industry be examined at the end of 1937, then it becomes clear that the expectations of the earlier years have not only been fully justified but over-run. The year 1937 was described generally as being one of considerable activity. The conditions experienced by the trade justify completely the term "boom." To this, two factors contribute, first, the generation of a much more general and considerable activity on the part of what may be termed "industry generally," and second the super-imposition upon this first of an activity attributable to the placing of rearmament orders. The position

may perhaps be exemplified by quoting the statement made by the *Glasgow Herald* Trade Review's survey of the Scottish machine tool trade on December 28th, 1937 "From present indications it would appear this demand is not slackening off. Delivery is a very important factor and under present conditions the period must necessarily be somewhat extended. In fact in some cases machines are being quoted for delivery in 1940. As the output for 1938 is fully contracted for the various manufacturers are looking forward to next year with satisfaction and confidence." And broadly, the same holds good for the machine tool trade more generally considered. Such a situation obviously carries with it dangers as well as bounties. Much activity at the moment is necessarily for home purposes and there has been voiced on a number of occasions the fear that with so much stimulus from the home demand producers might further weaken their contacts with an already difficult and diminished overseas demand. The survey of the engineering section of the metal trades might well close, therefore, with an examination of their export position.

II

There are two positions on which inquiry should focus first, on the dates at which recovery from the lowest point begins to be registered, and, secondly, upon the recent export position. With regard to both, the difficulty arises, however, that the engineering trades are by no means a homogeneous group, and the trade figures reflect their characteristic diversity. With this provision in mind it may be claimed that they nevertheless confirm the conclusion concerning the location in time of the recovery movement which has already been made. A few references to the movement of some of the more important trade categories will assist in substantiating this claim. The lowest point in the import of machinery was reached in 1933: this year also saw the lowest import of electrical goods and apparatus. For both, as the following brief tabulation shows, 1934 was a year of recovery.

On the side of exports the period of low returns is covered by the years 1931 to 1933 inclusive. Cutlery and Hardware made some recovery in 1932, but to no very significant level till 1933.

VALUE OF MACHINERY AND ELECTRICAL GOODS AND APPARATUS
IMPORTED INTO THE UNITED KINGDOM
(£000's)

	1931	1932	1933	1934	1935	1936	1937
Machinery	15,485	10,540	8672	11,295	13,225	17,974	24,224
Electrical Goods and Apparatus	6,240	2,745	2439	3,065	3,089	3,662	4,083

The same may be said of Implements and Tools (other than machine tools), but their decline was steeper and their subsequent improvement more pronounced. Electrical Goods and Apparatus experienced their lowest point in 1932, but their position was not greatly different from this in 1931, 1933, and 1934. Not until 1935 did their position show any pronounced improvement. Boilers and Boilerhouse Plant were at their lowest in 1932, with no significant change in 1933, but their 1934 figure is better. Electrical Machinery was at its lowest in 1933 with 1934 rather better, but with no significant improvement till 1935, and then only to a level approximately two-thirds that of 1930 and 1929. Machine Tools display a curiously uneven movement to 1932, but sag in very pronounced fashion to reach their lowest point in 1933. Slight improvement was made in 1934 and pronounced improvement in 1935. Prime Movers, Internal Combustion Engines, reached their lowest level in 1932. Their level in 1933 was above that of 1932 and also above that of 1931. Their 1934 level was higher still, an indication that their recovery was well grounded and not merely momentary. Textile Machinery touched a low level, almost its lowest, in 1931, recovered slightly in 1932, then fell to its lowest point in 1933. Fairly strong recovery was made in 1934, but with some unevenness, for a further sag was recorded in 1936. The goods classified officially as "other machinery and parts" touched their lowest level in 1932 and remained so in 1933. Slight recovery was recorded in 1934, but not until 1935 was reached did the movement acquire any considerable significance.

On the second of the two points on which it was suggested earlier that attention might be focused, comment may again be

general, with a number of illustrative references in support. On the imports side the position reached in 1937 was at a level higher than that of 1929 or any of the intervening years. On the export side the position is more complicated. As might be expected, the different sections display a diversity of course and no one general statement will meet the situation. Broadly expressed, the position in general machinery exports is that good recovery had been displayed by 1937, but that both on a tonnage and values basis it was insufficient to carry the figure to the 1929 level. electrical goods and apparatus, on an uncorrected values basis, almost touched their 1929 level again in 1937, while cutlery and hardware implements slightly overtopped their 1929 position. Textile machinery and locomotives stand out amongst those classes of export for which separate quotation is possible as having failed by an appreciable margin to close the gap.

Thus, broadly, the position is perhaps rather less disturbing than much general discussion concerning the state of trade and the danger that the metal trades may become over-preoccupied with home requirements of a temporary character might suggest.

The danger however is no unreal one and added weight might be supplied to the note of questioning by the reflection that much rearmament work is in an early phase yet. In its special survey of the engineering industry in its supplement of 14th November, 1936, the *Economist* held that the only unsatisfactory feature to be noted was "the relatively slow improvement in export business, due partly to the pressure of home demand." It expressed its fears and proffered its advice in the following terms: "In a few years' time when domestic revival has run its course, the industry will again become dependent to a greater extent on foreign markets. And to neglect them meanwhile might well prove disastrous to the industry in the future." The caution is wise. The rise in exports since that date does not in itself prove either that producers have neglected or not neglected their overseas markets, but it may at least be read as a sign that even though there is still leeway to be made up the engineering trades taken as a whole have not been wholly, or perhaps even excessively, one-sided in their activity. The danger that suggests itself is more general in character, namely, that British industry

as a whole having carried through over recent years much re-equipment which the earlier depression years dammed back, and the British Government having intensified the demand already gathering momentum by its rearmament programme, the engineering trades will extend their capacity and add to their labour supply to a point far beyond the requirements of a situation in which Government work has tapered off and general business activity again sunk to a sub-normal level.

Such thoughts, however, go beyond the limits of this survey, though they arise logically enough, it may be claimed, from elements which lie strictly within it. It may be enough therefore to conclude with the point that whereas five years ago the problem of the industry was high unemployment and idle plant, the more recent problem has been a declared shortage of skilled labour, inability to make early delivery, and an over-keen demand for raw materials. The position is perhaps summed up as adequately as there is need for in the figures which show the number of members of the A.E.U. unemployed. The Union began the year 1933 with an unemployment roll equal to 24.25 per cent of its members. It began the year 1938 with no more than 2.11 per cent of its members unemployed. If this is slightly higher than figures which have been recorded during the course of 1937, then the excuse for abstaining from further comment must be that seasonal variations may perhaps play some part in the movement, though this has not been considered; and, secondly, that it must remain the purpose of this survey to deal only with what is safely past.

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Glasgow Herald. *Glasgow Herald* Annual Review and Trade Supplement for each of the years 1932, 1933, 1934, 1935, 1936, and 1937.

The *Board of Trade Journal*, in its numbers covering the first six months of 1937, contained interim reports upon the results of the

1935 Census of Production No use of their data has been made in this survey, however, for they throw no light on the position in 1932 and 1933, the critical period for the present study, though they are undoubtedly valuable for other purposes; they state the position of each section in 1934 and 1935

BOARD OF TRADE

Report on Import Duties Act Inquiry, 1933, Part II (1936)

Report on Import Duties Act Inquiry, 1934, Part II (1937)

The Ministry of Labour Gazette (monthly), and the 21st and 22nd Abstract of Labour Statistics of the United Kingdom (Cmd 4625 and Cmd 5556) for data on numbers insured and unemployed

THE BUILDING TRADES

By SIR HAROLD BELLMAN

THE BUILDING TRADES

I

PHARAOH's dream of the seven fat kine and the seven lean kine, it has been said, was the first recorded forecast of a trade cycle. Despite the vast intervening period, there is still much in the trade cycle that is as mystifying as any of Pharaoh's dreams. This contribution does not pretend to solve the least of these mysteries, and still less to deify any particular theory. Its scope is much more modest.

In a single sentence, it is chiefly concerned to summarize the course of the building industry, and especially the house-building section, during the recovery period, to outline the interactions of building society operations, and to give such indications as are possible of the bearing of these joint activities on recovery generally. This is indeed a sufficiently difficult task, especially when it is remembered that statistics, official and otherwise, as they are now issued, often raise more questions than they answer. Despite all the handicaps, however, the effort should be made, for the belief is widespread that what is described as the housing "boom," inseparably linked with and supplemented by building society advances, has been the mainspring of Britain's economic recovery from the depression of 1931 and the succeeding period. This opinion has been as widely—and sometimes as enviously—entertained abroad as at home. Politicians, bank chairmen, economists and publicists of every description have endorsed the view with a unanimity rarely attained in such a matter. Moreover, the analysis is worth while if only to suggest where knowledge may be made more serviceable for the more systematic inquiry which is needed ultimately.

II

Most attempts at portraiture require a background, whether the subject be *homo sapiens*, an epoch or an industry. This chapter is mainly limited to events *after* the crisis of 1931, but an industry

rarely operates as a series of discontinuous jerks. It has roots in the past and branches stretching towards the future. The house-building section of the building industry, after being quiescent during the war, opened a fresh chapter in its history very soon after the Armistice. It was not, however, a chapter in which event followed event with the neat logical pattern of a detective story. It was in fact a muddled chapter, which is customarily summarized by the word "abnormal"; and this is justified in the sense that abnormal is the antithesis of conditions which give some assurance that the rhythm of economic life will pursue an even tenor undisturbed by ups and downs of excessive violence.

Thus (to glance at the key figures) by 1921 the number of houses erected annually had just exceeded the 100,000 mark, this was followed by an immediate setback lasting two years and then output began a steady upward climb, which in 1927 culminated in a peak figure of a little under a quarter of a million. The next year saw another setback, with the number erected falling considerably below 200,000. There was some recovery in the succeeding year and a temporary equilibrium of around 200,000 houses was then established. Meanwhile, private enterprise, either with or without State assistance, had provided a steadily increasing proportion of the houses built. It was with total output at this level of about 200,000 houses per annum that the economic blizzard of 1931 sprung up with full fury. Contrary to some expectations, the blizzard did not deal an immediate disabling blow at house-building. Actually output increased during the year ended 31st March, 1932, as compared with the preceding twelve months.

III

At this stage of the picture one must think more of the sitter and less of the background; for the way is now clear—using this word in a relative sense—for a discussion of housing output and the building industry at closer quarters.

The table given on p. 399 summarizes housing output according to its source and circumstances since 1930.

TABLE I
HOUSING OUTPUT (ENGLAND AND WALES ¹)

Year ended 30th Sept ²	PRIVATE ENTERPRISE			LOCAL AUTHORITIES			Total Output
	With State Assist- ance	Without State Assist- ance	Total	With State Assist- ance	Without State Assist- ance	Total	
1930	2272	107,410	109,682	49,052	2,965	52,017	161,699
1931	1866	129,790	131,656	60,169	3,119	63,288	194,944
1932	2656	130,830	133,486	66,434	2,056	68,490	201,976
1933	2456	166,644	169,100	47,977	1,236	49,213	218,313
1934	2581	257,746	260,327	49,679	3,663	53,342	313,669
1935	230	275,069	275,299	32,685	10,660	43,345	318,644
1936	306	274,348	274,654	63,749	1,125	64,874	339,528

Three main facts emerge clearly the boom started from a level of output which, in the light of immediately preceding experience, must be regarded as considerable—the industry was, in other words, very far from being demoralized by the crisis, the boom, as judged from the official *output* figures, was not decisively established as such until 1934, when output suddenly leapt forward by 50 per cent, and the increase in output which constituted the boom was due entirely to the activity of unassisted private enterprise.

It is, perhaps, remarkable that the erection of houses was so little affected by the crisis, even allowing for the fact that operations extend over a considerable period and are not easily susceptible to immediate adjustment. The sale of houses was no doubt less easy for an interval, but it remains true that output was not materially influenced. Since some period preceding 1934 was the turning point, it is necessary to examine the building industry and other relevant facts around this time more closely. And at this stage, too, it is essential to obtrude one or two necessary definitions. The term “building industry” will be

¹ The figures for Scotland are excluded, since output, especially by private enterprise, has been of relatively very modest proportions

² The official year ends on 31st March, but most of the statistics discussed cover the calendar year, and since this is impossible in the case of housing output, the figures have been adjusted to the year ended 30th September, as this facilitates comparison with the building society figures

used in the same sense as for the Ministry of Labour unemployment figures and embraces—to mention the more important categories—bricklayers, painters, carpenters, plumbers, plasterers, labourers, etc., that is to say, it relates entirely to the construction side, as opposed to the manufacturing side. It will exclude public works contracting, except when otherwise specifically indicated. Public works contracting covers only about one-fourth the number in the building industry, but, what is more important in the present context, it is quite impossible to determine to what extent house-building directly involves public works contracting. There has been an increasing tendency for speculative builders to erect houses through the medium of subcontractors. In these circumstances, it is probable that road and sewer work, etc., is undertaken by men who are classified by the Ministry of Labour as falling under public works contracting, but there are no means of assessing the numbers involved.

The following table summarizes some of the key facts regarding the building industry over the period with which we are primarily concerned—

TABLE II
THE BUILDING INDUSTRY

Year	Index of Insured Workpeople in July of each Year (1923 = 100)	The Percentage Unemployed (Monthly Average)
1929	121.2	13.3
1930	122.2	16.4
1931	126.0	22.5
1932	125.8	27.0
1933	129.6	24.1
1934	136.2	18.7
1935	143.3	16.4
1936	149.6	14.9

It should be emphasized that the number of insured workers embraced by the industry was almost continuously increasing, and the increase was very considerable as compared with, say, 1923. The percentage unemployed should therefore, be read

against this background.¹ As another background factor, it may be noted that the proportion of general unemployed more than doubled between the prosperous year of 1929 and the crisis year of 1931, the average figure for the latter being 21.3, and this was only slightly increased during the following year, which was the peak year. The building industry, up to a point, followed a parallel course. The percentage unemployed increased from 13.3 in 1929 to 16.4 in 1930, to 22.5 in 1931 and still more—and this is where it exaggerates the general trend—to 27.0 per cent in 1932, the peak year for the building industry. Thus on this showing 1932, as a period during which on the average more than one in four of the workers was unemployed, was decidedly bleak for the building industry, moreover, the figure did not fall below 26 per cent in any one month. The first quarter of 1933 saw the position become even worse, for the quarter's average was no less than 33.1 per cent. The spring quarter, however, showed to better advantage and the improvement continued during the summer, in fact to such good purpose that the average for the quarter ended September was down to 19.6 per cent. The winter figures remained relatively favourable, but unemployment was still at a comparatively high level.

In terms of these figures, the real turning point in the industry's fortunes, however, was close at hand. The earliest period of 1934 contained the promise of better times, and by mid-summer the promise had been fulfilled, for the unemployment figure was down to 14.9 per cent. This, combined with good autumn figures, gave the year an average of 18.7 per cent, in contrast with 24.1 per cent for 1933.

Although these figures are necessary to maintain the sequence of the narrative, they are very far from telling the whole story. Actually (looking at the matter as far as possible solely from the standpoint of house-building) the position was even better than these figures suggest. Building embraces a vast number of workers engaged on a wide variety of tasks, many of which have no direct connection with the erection of new houses; in due

¹ Indeed, the number actually in employment may in these circumstances seem a better guide to the position, but the percentage unemployed is the more familiar and more convenient index, the number in employment will in any case be referred to later.

course the relative importance of house-building to the industry will be considered more fully. Of the crafts covered by building, bricklayers are among the more responsive to changing conditions and among the first to benefit by increasing building activity. The 1933 figures relating to bricklayers are particularly instructive in this connection. It is known that during this year all non-residential building was at a minimum, or rather that few fresh enterprises outside house-building were extensively embarked upon. During the first quarter of 1933 the percentage unemployed among bricklayers amounted to about 30 per cent, but fell sharply to 12.6 per cent during the summer quarter, and was down to 9.3 per cent for the quarter ended September, with a figure of 8.7 per cent for October. Indeed, by this latter month there had been a reduction of 17.6 per cent in the percentage unemployed among bricklayers as compared with a year before, and no other craft or industry of equal importance from the employment standpoint showed an equivalent proportionate decline and very few had such a relatively favourable actual percentage. These figures, since they compare with a monthly average of 26.2 per cent for 1932, reflect an astonishing improvement. In fact, they are by themselves almost sufficient to justify the conclusion that the initial impact of the boom in house-building was actually felt in the summer and autumn of 1933. It is noteworthy, however, that there is confirmation of increasing activity in the unemployment figures of other building crafts. Plasterers benefited after a slight interval and for the last two quarters of 1933 their percentage unemployed was around 10 and 14 per cent respectively, against 37 per cent for the first quarter. Carpenters showed an almost equally striking decline and other key crafts sooner or later participated in the improvement.

IV

In examining the circumstances of this enhanced activity, it is useful to glance at the course of the figures of plans passed for dwelling houses. In general, the plan figures have definite limitations: they relate only to the larger centres of population and might therefore sometimes tend to reflect disproportionately local authorities' output; they exclude the L.C.C. area; they

offer no indication of the extent to which builders might have plans "up their sleeve" at any one time. For these reasons, the plan figures are not an infallible guide to actual output and consequently they will be used as little as possible in this discussion. Certainly, if output figures are available they are much to be preferred to the plan statistics. Where, however, the plan figures show a considerable rise after an inactive period or from a stable level, they may be interpreted as reflecting a hopeful outlook among builders, especially if private enterprise is at the time responsible for the major part of the output. This attitude is clearly apparent among builders even so early as the last quarter of 1932. Thus for October and November the plans for dwelling-houses amounted to nearly £5 million for each month, against under £3 million for the corresponding months of 1931, and for December, 1932, to over £4 million, against upwards of £2 million for the same month in 1931. The improving tendency gathered marked impetus as 1933 proceeded, the monthly average plans for that year being £5.2 million, as compared with £3.9 million for 1932 and £3.4 million for 1931. Obviously, these figures suggest the emergence of considerable hopefulness, or at any rate an anticipation of broadening activity, among builders in the late autumn of 1932. What caused this reaction at this particular period? The conversion of War Loan in the summer was admittedly hailed as a great national achievement and created a psychological atmosphere which was more favourable to confidence than at any time since the onset of the crisis. There was, for instance, a notable rise in the London and Cambridge index of industrial shares from July, with the result that the index moved up from 73 in June to 91 in December, with 1924 = 100.

On the other hand, while money was now "cheap," was it "cheap" to speculative builders? It is true that the first reduction in the building society mortgage rate for new advances was made in September—from 6 to $5\frac{1}{2}$ per cent—this is, however, one instalment of a longer story which is told in full at a later stage. Certainly there was by no means an immediate substantial revival of confidence throughout the country's economic organization. The London and Cambridge Economic Service, referring to the end of October, 1932, remarked that: "There is no

improvement in sight for production for the home market or for export to most of the European countries. . . . Though money is cheap, there does not appear to be a demand for it in home industry." The same service, in a reference to the end of January, 1933, wrote: "The best that can be said for the immediate outlook here is that we may reasonably expect that there will be no relapse, provided there is no serious relapse abroad." These quotations do not suggest unbridled optimism in the business world. The speeches of some of the bank chairmen at the beginning of 1933, however, betokened a measure of confidence. The late Mr. F. C. Goodenough, then Chairman of Barclays Bank, speaking towards the end of January, 1933, said Great Britain's confidence in her future became "more and more apparent" and stood out "more strongly," while the people had shown they were masters of themselves and intended by their own activities so far as possible "to surmount their difficulties." Mr. McKenna, in his speech as Chairman of the Midland Bank in the same month, was more positive. "Conditions to-day," he said, "are distinctly better than a year ago," although he admitted a "deplorably high level of unemployment."

When full allowance has been made for this improvement in sentiment, however, it remains true that the speculative builder was active in preparing plans for an expansion of output at a period when expansion was the exception rather than the rule. In short, he was abundantly justifying the word "enterprise" in the description "private enterprise" which is often applied to him. His finger was, of course, close to the pulse of demand, but all the same it is difficult to believe that in the autumn of 1932 the industry anticipated that the whole of the projected output would be so rapidly absorbed and to this extent it literally induced some part of the earlier demand during the nascent stages of the boom. What is incontrovertible, however, is that housing output materially expanded very shortly afterwards. Most of the houses in respect of which bricklayers were engaged so briskly in the middle of 1933 would appear in the official record of output for the twelve months ended 31st March, 1934. This shows a very significant rise in the output of private enterprise, and especially in that part of it for which no claim

was made on public funds; and the rise was concentrated in the last six months of the period. The houses erected by private enterprise without state assistance had been 80,000 and 87,000 for the two successive half-years ended 30th September, 1933, but during the following half-year the figure jumped to 121,000; with a still further increase to 137,000 for the next half-year—i.e. the half-year ended 30th September, 1934.¹ Here, then, was the housing boom getting into its stride. Incidentally, it is noteworthy that houses erected by private enterprise without state assistance, if measured at yearly intervals ended on 31st March—the official practice—were *continuously increasing throughout the crisis period*. The rise was very gentle during the years 1931-2 to 1932-3 and thereafter became rapid.

On the basis of these figures therefore it seems possible to say that the initial impulse of the housing boom originated, thanks in part at least to the enterprise of the speculative builder, in the late autumn of 1932 and the beginning of 1933, was translated from paper to employment on a substantial scale in the summer and autumn of 1933; and made the first outstanding impression on the official statistics of output relating to the half-year ended 31st March, 1934, which for unassisted private enterprise showed an increase of 50 per cent as compared with the output of the preceding March half-year.

V

Before passing to the next stage of the analysis, it is tempting to consider whether there is any evidence regarding the regional origin of the boom. During the period concerned the country was acutely conscious of the contrast in economic fortune popularized in the phrase "Two Englands". and hence the discussion of economic activity (or inactivity) in terms of regions had a special importance. It is not possible to be very precise in regard to regional developments, but there is information of some value. Thus, the building industry in the South-eastern Section—as defined by the Ministry of Labour and comprising the important counties of Bedford, Buckingham, Cambridge, Essex (part of),

¹ The figures for the half-yearly periods from 1930 to 1937 are given in Appendix I

Hertford, Kent (part of), Norfolk, Suffolk, Surrey (part of), and Sussex—compared favourably with the rest of the country almost throughout the crisis period. Even in 1932—the worst year for the whole country—the percentage unemployed in the second quarter had been reduced to 19·3 and showed only a moderate increase during the two remaining quarters of that year and also in the first quarter of 1933. At the end of the June quarter the monthly average worked out at only 11·9 per cent, fell to 10·5 per cent for the third quarter (in contrast with 19·6 for all areas) and rose only to 13·6 per cent for the last quarter. The improving tendency was fully maintained in 1934, for by May the percentage was down to 6·6, against 15·5 for all areas and these figures are the more significant since the South-east is one of the major employment divisions of the industry.

There is little *direct* evidence to indicate whether, and, if so, why, house-building became suddenly active in this area. It is true that the plans passed for dwelling-houses in the region show a considerable increase during 1933, against 1932, but at rather more than £5 million for the former year these plans represented less than 10 per cent of the total for the whole country. The plan figures, however, are probably a particularly imperfect index of house-building in this area, since they chiefly relate to the larger towns and these are not conspicuous in the South-east. What is transparently clear is that the unemployment experience for all industries in this area has been continuously favourable, for it has had either the lowest or second lowest figure of all the Ministry of Labour's administrative divisions throughout the crisis: in 1933, for instance, it returned the lowest percentage of all areas at 11·5, against the highest of 34·6 for Wales. At any rate—to indicate another conclusion—it seems possible for this area (the South-eastern Section) to lay strong claim to be that in which the housing boom received its initial impulse on a large scale; and this accords substantially with observation.

VI

Here a variety of questions press for an answer. The one which will perhaps be uppermost in many minds is: What had been happening in the meantime on a wider front; was this

development in the building industry—the story has so far been carried up to 1934—behind or in advance of general recovery? Before such questions can be answered with any regard to perspective, it is necessary to attempt to determine, so far as possible, what is the “employment-creating” capacity of house-building. Broadly, the erection of a house involves two main activities: the preparation of materials and erection on the site. On closer inspection, however, a house built for sale consists primarily of (a) land, (b) material, (c) labour, and (d) gross profit. Conditions vary widely according to the scale and efficiency (the former often determines the latter) of the builder. Thus it is necessary to make assumptions which strike a happy mean between the favourable and not so favourable, and while the arbitrary nature of these assumptions is not denied, they are perhaps not impossibly remote from the facts. It is assumed, then, that the average house has had a selling price of £600, that land and gross profit have absorbed 25 per cent, leaving a balance of prime cost of £450 to be apportioned between material and labour. These proportions, it is suggested, should be 62 per cent for materials and 38 per cent for labour, or £279 and £171 respectively.

If strict regard is had to time sequence, the first to feel the impact of an increased demand for new houses are frequently certain material manufacturers (excluding for the present any question of imported supplies). If, however, there is a considerable accumulation of stocks, this might delay the force of the impact on the manufacturers. There are no general statistics bearing on this point, but it is doubtful whether in the middle of 1933 there were *large* accumulated stocks. At any rate, it is noteworthy that brick, tile, pipe, etc., manufacturers experienced a sudden increase in demand (either anticipatory or actual) in the earlier part of 1933, for the percentage unemployed fell sharply from an average of over 22 per cent for 1932 (and higher figures in the early months of 1933) to 15 per cent for June of that year; and the figures remained around this lower level for the rest of the year, with a fall to still lower levels in the middle of 1934. The figures for sawmilling, machined woodwork, etc., show a similar, if less pronounced, trend.

Meanwhile, all the material required for house-building was not supplied by the home market. This particularly applies to bricks. Before 1931 the post-war peak year for brick imports was 1927, when imports amounted to 278,000,000 bricks. In 1933, despite the tariff imposed in the meantime, imports amounted to 238,000,000 bricks. In 1934 the figure reached no less than 355,000,000 and in 1935 fell to 240,000,000, they were used largely in the South of England, where they represented a serious proportion of the consumption. To this extent the home market was deprived of employment, but the effect should not be exaggerated. A standard of measurement is provided by the fact that the production of building bricks in Great Britain in 1930 totalled 4,413,000,000 bricks;¹ and for what it is worth in the present context it may be added that "salaries and wages probably represent over 50 per cent of the productivity costs in the brick industry." Incidentally, some large builders, owing to difficulties in obtaining deliveries in the earlier phase of the boom, set up plants for making their own bricks. Again, wood and timber imports increased notably during 1933, though this was not displacing a domestic product in the same way as bricks. Imports of some other materials—notably tiles—were considerable, but bricks were the most important item, and there was a decline—due doubtless to the tariff—in some other imports as compared with the pre-crisis period.

It may be assumed, after allowing a margin for imported materials, that the gross expenditure on materials with output in the region of 200,000 houses per annum—the 1931-3 figure—is little short of £50,000,000 per annum; and if housing output expands by 50 per cent, as it did in 1934, the expenditure on materials will expand more or less proportionately. The materials are drawn from an extremely wide range of industries. Indeed, it is expressly for this reason that house-building is

¹ It is noteworthy that with housing output at 200,000 per annum and assuming each house required on the average say 13,500 bricks, the brick requirements in connection with house-building would amount to 2,700,000,000 per annum; but with output at 300,000 houses per annum, brick requirements in connection with housing would reach 4,050,000,000 which, on the basis of the 1930 figures, is approaching the brick industry's capacity on account of housing alone, though it is believed that since 1930 output capacity has considerably expanded.

regarded with such favour from the employment standpoint. "Housing," says Sir Arthur Salter, "is by general consent a key industry in the economic process. It involves an exceptional proportion of direct and immediate employment. It has, to an exceptional degree, a quickly radiating effect upon other industries." It has been claimed indeed that building has "more ancillary trades and industries and is more widespread geographically than any other industry", that "most of the total cost of its products is disbursed in wages", and that "the materials used are almost entirely obtained from, and manufactured in, this country." Moreover, the erection of large numbers of new houses results in extensive calls upon such trades as those making and supplying furnishings as well as upon such services as electricity supply, of which domestic consumption increased by 65 per cent between 1930-1 and 1934-5.

The Building Industries National Council¹ has divided the range of related industries into three main groups, namely (1) industries directly dependent upon, (2) industries partly dependent upon, and (3) industries indirectly affected by² building and constructional activity. The range may appear somewhat comprehensive in relation to house-building, since allowance is made for public works contracting, etc. This grouping will, however, serve for broad purposes of comparison, at the best an approximation is all that is possible, though this probably puts a favourable, rather than an unfavourable, complexion upon the situation as viewed in this chapter. The figures are given on p. 410.

Thus employment was reduced—in other words, unemployment increased—during 1932. On the other hand, there was a marked improvement in employment during 1933—the year in which the first signs of increasing housing output were discernible. The movement gathered marked impetus in 1934—the year for which the official records disclose a conspicuous leap forward in housing output. During this period the industries classified as directly dependent and indirectly affected showed to particular advantage.

¹ Year Book for 1936

² The constituents of each group appear in Appendix II.

TABLE III
NUMBERS IN EMPLOYMENT IN JULY EACH YEAR IN INDUSTRIES
ASSOCIATED WITH BUILDING
(ooo's omitted)

Year	(1) Industries Directly Dependent	(2) Industries Partly Dependent	(3) Industries Indirectly Affected	Total of Columns (1), (2), and (3)	Percentage Increase or Decrease on Previous Year
1931	349 5	171 7	636 6	1157 8	—
1932	332 2	169 7	630 5	1132 4	— 1 7
1933	359 2	188 8	682 1	1230 1	+ 8 1
1934	402 3	201 0	748 3	1351 6	+ 9 9
1935	419 1	207 7	766 6	1393 4	+ 3 1
1936	447 5	220 7	830 9	1499 1	+ 7 6

VII

Before comparing these figures with the course of events in the wider field of employment, it is necessary to say something about the "employment-creating" capacity of the *erection*, as opposed to the material manufacturing, side of house-building. It has been assumed, it will be recalled, that on the average, £171 is spent on labour in the erection of a house, which gives an annual wage bill of £34 million with output at 200,000 per annum and of £51 million with output at 300,000 per annum. What does this mean in man-hours? Once again with the reminder that the figure is an assumed average, the number for the house itself works out at, say, 1650, plus, say, 450 to cover "development" labour—i.e. for roads, paths, sewers, etc.—giving a total of 2100 man-hours. Thus the erection of 200,000 houses (the average annual figure for 1931-3) provided some 420,000,000 man-hours of employment for the building industry. Taking the number of employed in the industry at 675,000 (the monthly average of the employed for 1933) and assuming a 50-hour week and a 50-week year, the number of man-hours worked by the whole industry was 1,687,000,000, or, say, 1,600,000,000 to allow for short-time working due to weather,

etc.¹ On this basis, therefore, the erection of 200,000 houses provided work for about one-quarter of the building industry: and as housing output increased, the number of employed expanded and thus the proportion obtained for 1933 was not drastically affected (Actually the proportion worked out on this basis may be a little high, since some engaged on development work would no doubt be classified by the Ministry of Labour under public works contracting, etc.) Thus it would appear that house-building, while of considerable importance to the building industry (i.e. the erection side), is apparently not the predominant factor. At first sight, and relying on the result of casual observation rather than quantitative evidence, this may not be without a surprise element.

A glance at a table prepared by Mr. Colin Clark,² however, quickly supplies a corrective. He has prepared figures of output of certain capital goods for the period 1930-5 and has included the various branches of the building and constructive trades. The following is a summary of this part of the table—

TABLE IV
ANNUAL FIGURES OF OUTPUT OF CERTAIN CAPITAL GOODS,
1930-5
(Million £'s)

Year	Dwelling Houses	Factories and Workshops	Shops and Offices	Public Buildings, etc	Repair Work	Contracting
1930	94.9	13.55	9.25	13.70	117.2	92
1931	87.5	7.45	7.73	16.45	120.0	93
1932	80.6	5.68	6.78	10.18	122.8	84
1933	117.3	7.29	7.02	9.41	120.0	86
1934	131.4	9.58	5.69	8.90	129.0	92
1935	144.7	12.81	7.46	10.78	131.8	92

Mr. Clark's figures may not in every detail command general acceptance, but in any event they will serve the present purpose of affording an approximate basis of comparison. They embrace

¹ The figures relating to hours, etc., are very approximate, but since our concern is with relative proportions this is not of great significance.

² "National Income and Outlay," p. 182

a wider range of employment than that afforded by the "building industry"; they obviously include a large part, if not the whole, of the workers classified under public works contracting. When a liberal allowance has been made for this, however, it remains true that the building industry has had throughout recent (including the most depressed) years substantial alternative outlets for its activities; and this goes far to explain the proportion engaged in house-building (a rough approximation, it should be emphasized) on the man-hours basis

VIII

The stage is now set for the crucial piece of this analysis—namely, a comparison between housing activity and its repercussions on various associated industries, on the one hand, and the country's economic fortunes as a whole, on the other. The "stage" has, however, a decidedly amateur aspect. The lighting effects leave much to be desired, but in the true theatrical tradition, "the show must go on" and the following table attempts, as a preliminary, a comparison between certain outstanding figures—

TABLE V
INDEX OF HOUSING OUTPUT, THE COURSE OF EMPLOYMENT,
AND GENERAL BUSINESS ACTIVITY
(1931 = 100)

Year	Housing Output (12 months ended 30th Sept)	Employ- ment in Building Industry (Average for year)	Employ- ment in All Industries except Building (Average for year)	Employ- ment in Building and Ancillary Trades (in July each year)	Employ- ment in All Industries except Building and Ancillary Trades (in July each year)	<i>Economist</i> Index of Business Activity, Re-calculated
1931	100.0	100.0	100.0	100.0	100.0	100.0
1932	103.6	90.8	99.9	94.6	100.1	96.0
1933	112.0	100.0	102.7	104.2	103.8	101.7
1934	160.9	113.5	106.8	114.5	106.5	109.7
1935	163.5	122.3	108.8	120.0	108.7	114.3
1936	174.2	130.4	113.9	129.2	114.1	121.1

At no period did the increase in housing output—starting, as previously noted, from a considerable level—involve a proportionate increase in employment in the building industry,

though this was particularly noticeable in the earlier period. Thus (comparing all figures with 1931) housing output had expanded 60 per cent in 1934, with no more than a 13 per cent increase in employment in the building industry. Again, the course of employment in the building industry until 1933 compared unfavourably with that of all industries, excluding building. In 1934, however, this position was sharply reversed, for the building figures showed an increase of 13.5 per cent, against 6.8 for all industries except building. This will no doubt be accepted as indicating a distinct measure of leadership by the building industry. At first sight, however, it might have appeared (especially in the light of the figures relating to bricklayers, etc., previously discussed) that the 1933 figures for the building industry would have shown a greater degree of responsiveness. Technological improvements may have had some influence, but it is difficult to appraise this. The explanation chiefly lies, no doubt, in the fact that house-building, though important, is not the exclusive source of employment in the industry. Clearly, in the absence of the rising tendency of housing output in 1933—and the index above, since it is adjusted for the twelve months ended 30th September, probably under-states the increase for the calendar year—the building figures as a whole would have compared even less favourably with employment generally. For the rising employment in the building industry in 1933 was very selective, and can in the main be attributed without difficulty to expanding house-building. Moreover, this selectivity in improving employment was still partly true of 1934, in spite of the fact that the figures as a whole made such a good showing.

Since the point is of some importance, the unemployment figures for bricklayers, carpenters and plasterers are compared, *at quarterly intervals*, with those for the entire industry, for all industries, and against the half-yearly figures of housing output by private enterprise, in Table VI. The stimulus provided by increasing house-building is clearly apparent in this analysis. Furthermore, the comparison with the *Economist* index of business activity (which includes building) is significant. Housing output was in every year increasing much faster than general business activity. As might have been expected, however, it

TABLE VI
THE PERCENTAGE UNEMPLOYED IN CERTAIN BUILDING TRADES,
COMPARED WITH UNEMPLOYMENT ELSEWHERE, HOUSING
OUTPUT, AND GENERAL BUSINESS ACTIVITY

	PERCENTAGE UNEMPLOYED					Housing Output by Private Enterprise (six monthly periods)	<i>Economist</i> Index of Business Activity 1935=100
	Brick- layers	Car- penters	Plas- terers	Building Industry	All Industries		
Monthly aver- age, 1932	26.2	26.3	30.0	27.0	22.1	—	84
1933							
End of Month							
March	19.4	24.3	27.7	27.2	21.9	—	84½
June	10.3	15.2	14.5	19.9	19.1	= 88,000 (ended Sept)	87½
September	9.0	12.9	9.8	19.7	18.4		92½
December	18.7	16.6	22.7	25.9	17.5	= 122,000 (ended March)	93½
1934							
March	9.4	14.0	11.8	20.3	17.2	= 138,000 (ended Sept)	95
June	4.6	9.3	7.5	14.9	16.4		95
September	5.6	8.8	5.7	16.8	16.0	—	96½
December	9.0	12.5	11.1	21.0	16.0	—	97

was not until 1934 that employment in the building industry showed a greater proportionate increase than business activity.

Turning to employment in the ancillary trades (with which building has been grouped), these are the identical categories used by the Building Industries National Council, to which reference has already been made. They are not, however, *average* figures for the year, but the total in employment in July of the years shown. This is therefore only an approximate indication of the trend of events. In 1932 these industries apparently suffered a somewhat more severe setback than the rest of the employment field, but by 1933 they had gained a very slight lead (in so far as it is worth recording) and the margin was considerably increased during 1934. The whole trend, in fact, seems to have been in rather close sympathy with that of employment in the building industry; and since of all forms of activity in the building industry as a whole house-building was definitely the most progressive, this connection is not unnatural; it is

justifiable, in short, to attribute it mainly to house-building activity. Moreover, employment in the building and ancillary trades moved in much the same relationship to general business activity as did the building industry alone, a definite lead being established by 1934.

Thus (to sum up this section) there was a conspicuous selective increase in employment in certain trades associated with the building industry in 1933—an increase which was much in advance of that for the building industry as a whole and for all industries, and it was undoubtedly a reflection of expanding housing output. This tendency was even more marked during 1934. The increase in activity was communicated to a wide range of ancillary industries, and by 1933 employment in these industries had increased very slightly, and by 1934 materially, as compared with the rest of the employment field. A comparison of these trades and industries directly linked with house-building shows to considerable advantage when set against the index of general business activity. In brief, the figures go far to indicate that the expansion in house-building which first began to make its influence felt in the summer and autumn of 1933 exercised a substantial, and probably a decisive, leadership in the country's economic recovery from the depression of 1931-2.

IX

Hitherto the narrative has been chiefly concerned with events up to 1934, although the tables have frequently continued to 1936. This arrangement no doubt corresponds roughly with the balance of general interest. At any rate, to have broken the tables would have diminished their value, and the course of events since 1934 lends itself more easily to summary than in the earlier period. This summary must now be attempted. Looking back—at Table V, p. 412, which is not very far back and contains the meat of the matter—the two years 1935 and 1936 appear as a logical culmination (if this is conceivable in economic affairs) of their immediate predecessors. It is at any rate true to say that there was a continuance of similar broad tendencies, though not necessarily with the same degree of accentuation in all directions. Thus housing output, which

expanded extremel^y sharply between 1932 and 1934, increased at a more moderate pace, the increase was of quite modest proportions for 1935, but assumed larger dimensions in 1936. As for the building industry, employment increased in much greater proportion than the increase in house-building in 1935. To some extent this was no doubt due to enhanced activity in building other than house-building and repair work, etc. This factor, together with a more marked expansion in housing output, doubtless explains the considerable rise in employment in 1936. At any rate, during this period the increase in employment in the industry became more general among the various constituent trades

Comparing the building industry with the employment field as a whole (excluding building), the degree of leadership assumed by building was still more pronounced. In 1936 employment in the building industry had increased by over 30 per cent as compared with 1931, in contrast with an increase of 14 per cent for all industries, excluding building. Employment in the building industry and the ancillary trades continued strongly progressive, roughly in proportion to the increase in employment in the building industry alone. Furthermore, this group also increased its employment by a conspicuously wider margin than the rest of the employment field. By 1936 the group could show an increase in employment of nearly 30 per cent (measured against 1931) as compared with a 14 per cent increase for the balance of the industrial field. Thus this group apparently continued to exercise an outstanding influence on the course of employment during the period. Yet again, the group broadly maintained its lead when measured against the *Economist's* index of business activity, in which, of course, it was itself playing an increasingly important part.

X

Two main questions remain. It has been established that there has been a housing boom which originated in such circumstances as might well have been the decisive factor in Britain's economic recovery. The questions which will occur to every reader are: "How?" and "Why?"

The first is the easier. The house-building landscape has since 1933 been dominated by private enterprise, as Table I showed clearly enough, moreover, by far the greater part of the output has emanated from private enterprise, without any assistance whatever from public funds. It is a matter of simple observation, though fortified by statistics, that the great majority of the houses have been built for sale, and mostly with the assistance of building society advances.

In view of the extensive discussion of building society operations in recent years, the general lines of their activities are now widely known and need only be briefly summarized. They operate under special Acts of Parliament—chiefly the Building Societies Acts of 1874 and 1894. They set themselves to attract funds from the investing public and from the proceeds they make advances on the security of first mortgage, the overwhelming proportion of their mortgage securities being dwelling-houses bought for the personal occupation of the owner, and the societies are subject to a measure of Government supervision. The societies, so far as is known, first came into existence towards the end of the eighteenth century. Their progress was for many years uncertain, but by the early seventies of the last century there were some 2000 societies, with total assets of over £17 million. At the end of the century total assets had expanded to nearly £60 million and on the eve of the war they had reached £65 million, with a mortgage asset of just over £60 million, their advances during the years 1900 to 1913 amounted to about £9 million per annum. The war was a period of marking time. Thus before the post-war years the societies were a useful, but by no means outstanding, feature of a wide range of facilities which were usually grouped under the omnibus heading of Friendly Societies.

The astonishing transformation in the societies' fortunes has therefore been entirely a post-war development. This transformation has been a condition of a substantial part of the housing output of the period, for while in the societies' absence more or less comparable organizations might have been improvised, it is very doubtful whether they would have shown an efficiency and capacity for financing equal to that of the building

societies Over the whole post-war period the societies have been the most important single agency providing finance for houses, and during these years they have probably provided finance for, say, 2,000,000 of the 3,500,000 total houses built, apart from lubricating the property market for older houses.

Funds, secured from the investing public, have been a prerequisite of the societies' expanding mortgage service. The earlier period of their expansion is outside the scope of this review, but in 1930 the societies had reached a position which, from the standpoint of their finances, may be summarized as follows—

<i>Liabilities</i>		<i>Assets</i>	
	Million £'s		Million £'s
To Shareholders	302.8	Mortgage Asset .	316.3
To Depositors .	44.6	Other Assets .	54.8
To Other Creditors .	6.1		
Undivided Profit and Reserve	17.6		
	<u>371.1</u>		<u>371.1</u>

The basis on which the subsequent development has been financed is shown clearly by the following table—

TABLE VII
SOURCE OF BUILDING SOCIETY FUNDS IN RELATION TO ADVANCES¹
(Million £'s)

Year	(1) Mortgage Repayments (Principal)	(2) Net Additions to Capital	Total of Columns (1) and (2)	Amount Advanced
1931	46.5	48.0	94.5	90.3
1932	53.8	50.1	103.9	82.1
1933	68.0	31.7	99.7	103.2
1934	71.6	54.5	126.1	124.6
1935	77.2	46.4	123.6	130.9

¹ Report of Chief Registrar of Friendly Societies for the year 1936. Part 5, Building Societies.

Summarizing the position up to 1930, the societies owed this to a variety of circumstances. The post-war period, for instance, saw the emergence of a considerable body of small investors, to whose needs the investment facilities offered by the societies were exactly suited. By persuasive publicity the societies spread the merits of their investments far and wide. Their administrative record, and the esteem in which they were held by the leaders of public opinion, inspired a large measure of public confidence. The public seized the attractions of their investments—first-class security, a good yield paid net and free of liability to income tax and easy facilities for increasing or withdrawing investments. Economy and simplicity were the key-note of this investment service and by this means many were brought within its scope who otherwise would probably have been lost to the cause of thrift. Latterly the net additions to the societies' capital each year were equivalent to about 10 per cent of the nation's new annual savings.

These factors were also operative in the societies' expansion after 1930, but during this period the trend was strongly influenced by the wider currents of the investment and capital markets. For by this time the societies had assumed a notable status among the institutions competing for the available supply (whether new or old) of savings. The course of events in this wider field of finance is still near enough to be familiar and will be recalled only in outline. As the crisis of 1931 deepened there was a rush—almost a frantic rush—among investors for security above all considerations. The stock markets, apart from the highest class of fixed-interest bearing securities, offered no attractions whatever; in the jargon of Throgmorton Street, "there was nothing to go for." Moreover, the market for new capital issues shrunk to a shadow of its former self, with overseas lending in particular severely curtailed. Super-imposed on these powerful tendencies, the structure of interest rates was transformed by the Conversion operation relating to 5 per cent War Loan in 1932. The banking system absorbed gilt-edged securities on an extensive scale, and thus added impetus to the fall of these yields to famine levels. The table shown on p. 420 summarizes the course of these financial factors.

TABLE VIII
SECURITY VALUES, THE LONG-TERM RATE OF INTEREST AND
NEW CAPITAL ISSUES

Year	INDEX OF SECURITY VALUES, <i>Bankers' Magazine</i> , DECEMBER, 1921 = 100		Average Yield on 2½% Consols	New Capital Issues United Kingdom (Midland Bank)
	Fixed Interest	Variable Dividend		
1930	112 5	118 5	4.49	(Million £'s) 236 2
1931	102.2	90 7	4.40	88 7
1932	116 1	95 8	3 75	113.0
1933	122 0	108 4	3.40	132 9
1934	132 7	113 5	3 10	150 2
1935	129 5	120 1	2 89	182.8
1936	130 9	138 7	2 94	217 2

The building societies' rates of interest on investments followed other major declines in long-term interest rates, but after an interval. This was due less to any want of enterprise or flexibility in the societies than to their special relationship to the interest factor. The societies, as a settled aim of policy, have never sought to reproduce the more extreme movements of the interest curve, whether high or low, they cut through the "peaks" and "valleys." This relative stability is devised primarily in the interests of the borrower, for his is a long-term contract and frequent fluctuations in his interest rate would make any attempt at budgeting extremely difficult, if not impossible. For the greater part of the post-war period up to 1931 many societies, especially in the South, had paid on shares—their principal source of funds—5 per cent net and free of liability to income tax. One large metropolitan society reduced this rate to 4½ per cent in mid-1931, believing that 5 per cent was already out of harmony with prevailing trends. After the Conversion operation in 1932 there was a general tendency towards lower yields, but the actual arrangements were often a little complicated, since for a few years, differential rates, discriminating between old and new accounts, were frequently in force. The best guide to the position is (despite their limitations) the average rates paid on shares

as calculated for the whole movement by the Chief Registrar of Friendly Societies, and which are as follows—

	<i>Rate of Interest per Cent</i>
1930 .	4.65
1931 .	4.62
1932 .	4.52
1933 .	3.95
1934 .	3.80
1935 .	3.64

The average for 1936, when available, may show a further slight fall. The decision whether adjustment was required was never easy, since it was never clear to what extent the downward tendency could be regarded as, say, very short-term, medium-term, or in any other category. It was recognized, of course, that interest rates generally prior to 1932 had, owing to the existence of the great mass of 5 per cent War Loan, been unduly high, but there were periods, especially after the initial adjustment due to the conversion of War Loan, when the strength and character of the forces operating on interest rates were extremely difficult to assess. Certainly the pressure of funds seeking admission to the societies' coffers was a very misleading guide,¹ for obviously much of this was "bad" money, which was seeking merely temporary refuge until confidence revived. In fact, so far from being a guide to the state of the market in equilibrium, this was a problem in itself. For if the societies had made such extreme interest adjustments that all these funds could have been just accommodated, their position would have been very precarious when enterprise was once more astir and other investment outlets regained their attractions. In these circumstances, the societies' policy was to make, step by step, such interest adjustments as seemed at the time fully justified and

¹ During this period (and especially a little later) there were large sums of money seeking investment in property, though not necessarily wholly in houses. A leading firm of estate agents reported in 1933 that "There are almost unlimited funds available for mortgages" and again in 1935 that "Enormous funds are available for mortgage investment." Property companies issues in the capital market (Midland Bank figures) were. 1932, £4.2 million; 1933, £9.0 million; 1934, £11.0 million, 1935, £12.0 million; 1936, £6.5 million. Local authorities were also raising money for housing, though the amounts borrowed to assist ownership were much below the pre-crisis period.

also to impose quantitative restrictions on the amount which an individual investor, and especially a new investor, could place with a society.¹ Moreover, as Table VII showed clearly, the larger part of the societies' annual advances was derived, not from "new" money, but from repayments in connection with old advances

By degrees the investment and capital markets shed their major "crisis" characteristics. The thaw set in and funds again began to flow in accustomed channels. The share markets in particular recovered their familiar attractions and several selective booms were imposed on a generally improving tendency, and not least the gilt-edged market was strong until the beginning of 1935.

Meanwhile, the societies' experience in regard to withdrawals can be summed up by the single word "normal." They have on balance easily "held" their funds, despite all the rival attractions of competing investment fields (including the rise and growth of unit trusts). The societies have now, however, in many cases gradually relaxed their quantitative restrictions on new investments, according to individual requirements. For the present, at any rate, there is a sort of equilibrium with the yields over a wide area at $3\frac{1}{2}$ per cent net on shares and $2\frac{1}{2}$ per cent net on deposits. The expansion in the societies' investment resources has to some extent involved the enlistment of a more substantial investor, particularly as compared with, say, before the war. For what they are worth, however, the average shareholdings have not shot up meteorically over the past few years, for there has been merely a steady climb from £200 in 1928 to £240 in 1934 in the average shareholders' balance.

XI

Having thus secured funds, the societies make advances on the security of first mortgage to persons who desire to buy property for personal occupation or for investment purposes. The societies normally advance about 80 per cent (a little less or a little more) of the purchase price or of their surveyor's

¹ The restrictions were first imposed on a considerable scale in July, 1932.

valuation, whichever is the lower. This proportion is, however, increased in certain circumstances, as when collateral security or an insurance company's guarantee is available, in the case of large estates special arrangements are often made whereby advances in excess of the proportion indicated are made to the purchasers.¹ The loans are repayable in pre-arranged monthly instalments, which include principal and interest, and extend over varying terms of years, the most common nowadays being in the region of twenty. The average advance made by the societies during the period 1931-6 was £539.

The following table compares the societies' advances with the proportion of housing output for which private enterprise—the mainstay of the boom—was responsible. For local authorities' output does not directly concern the societies, since they build mainly for letting or where they sell they themselves usually provide loan facilities—

TABLE IX
HOUSING OUTPUT BY PRIVATE ENTERPRISE IN RELATION TO
BUILDING SOCIETY ADVANCES

Year	Housing Output by Private Enterprise ²	Number of Building Society Advances	Amount of Building Society Advances
			(Million £'s)
1930	110,000	159,000	88.8
1931	132,000	162,000	90.3
1932	133,000	159,000	82.1
1933	169,000	195,000	103.2
1934	260,000	238,000	124.6
1935	275,000	241,000	130.9
1936	275,000	252,000	140.3

Clearly this table shows a decided sympathy between the growth of housing output and the increase in building society advances. There was not, however, an absolute correspondence. Between 1932 and 1936 the number of houses erected by private enterprise increased by 100 per cent, whereas the *number* of building society advances increased by about 60 per cent.

¹ See *Economist*, "Building Societies Special Survey," 1936, pp. 22-3.

² Twelve months ended 30th September, adjusted to facilitate comparison with building society figures.

During the earlier period the number of building society advances exceeded the number of houses erected by private enterprise, but the position was reversed during the latter period. In terms of the *amount* advanced by the societies, however, there was a closer correspondence. If, during the latter period, there was an increase in the amount of building for investment purposes, which was financed by building society advances, this would go some way towards explaining the position disclosed by the figures, for in these circumstances one building society advance would often cover a group of houses. There was certainly an increase at this time in the number of houses erected by private enterprise and to be occupied by persons other than the owners. The following are the official statistics for the period and show the considerable extent to which houses were erected for investment—

Year Ended 30th September	Houses Erected by Private Enterprise without State Assistance	Number Occupied by Persons other than the Owners
1934	258,000	49,000
1935	275,000	57,000
1936	274,000	67,000

It is probable—indeed certain—that a number of these houses were financed with building society assistance, but the exact proportion is unknown. As for the relationship of the building societies to the output of private enterprise as a whole, it is not possible to say what precise number they financed each year. Some of the houses were bought for cash; insurance companies, the private mortgage market—consisting largely of funds controlled by solicitors, estate agents, etc.—banks and other agencies also provided borrowing facilities. Moreover, the societies were currently engaged in financing property which was not newly erected. There is little doubt, however, that the building societies provided mortgage facilities for by far the greater proportion of the new houses each year. The societies probably financed (on a conservative estimate) about 80 per cent of the number of all houses erected by private enterprise in the earlier period;

and probably 75-80 per cent of the number built by private enterprise for sale in the latter period, and in addition a considerable number of the houses built for investment purposes. Whatever the exact proportion, it is apparent that the societies were an integral factor of the first importance in the housing output of the period—as indeed they have been during the whole of the post-war years.

Any attempt to disentangle cause and effect as between the expansion in housing output and building society mortgage facilities is almost as difficult as deciding between the first hen and the first egg, though perhaps this may be said: the building society mortgage service was already in existence and had already proved itself adaptable to the pressure of increased demand, which was a fair token that it could continue to display this quality. In such discussion as there has been, the tendency has been to concentrate on the rate of interest. Arguing in the light of historical analogy, it has been claimed that active house-building has usually coincided with periods of low interest rates¹ The case as it applies to the contemporary problem has been put by Mr. R. M. Shone² as follows: "Everyone is aware in a general way that if the long-term rate of interest falls from 5 per cent to 3 per cent, a stimulus is given to the production of such durable goods as houses, and we all know from the facts of the recent housing boom that such a stimulus can be very powerful. Indeed, so remarkable has been the housing boom that many people are inclined to doubt whether it has not been out of proportion to the change in the rate of interest mainly responsible for it. But that this is not necessarily so, we shall see by demonstrating that in the case of goods of high durability, the fall in the rate of interest is equivalent to a very considerable fall in their price"

¹ "When the rate of interest falls, then houses rise"—the late Major Harry Barnes in "Housing", "Brick production (and therefore building activity) will be seen to follow the rate of interest with a time lag of about a year (from 1785). The correspondence is remarkably close, at least down to the middle thirties and even thereafter the changes of direction in movement are similar"—Mr. H. A. Shannon, in *Economica*, August, 1934. The contrary view, however, is sponsored by Professors Warren and Pearson of America, their conclusion being, "when building is most active, interest rates are high"—*Fortune*, August, 1937, and their book, "World Prices and the Building Industry"

² "Some Modern Business Problems," edited by Professor Arnold Plant.

It has already been explained that the building society investment rate of interest follows any movements in the long-term rate of interest only after an interval, and since the mortgage rate is adjusted with reference to the investment rate—for the rate at which the *societies* borrow mainly governs the rate at which they can lend—this time-lag also applies to the mortgage rate. Thus the building society lending rate was adjusted step by step over the period under review. During the few years preceding the crisis the lending rate widely current was 6 per cent, the following is a time-table of the subsequent adjustments applying to a substantial volume of new mortgage business—

From 1st September, 1932 . . .	5½ per cent
„ 1st June, 1933 . . .	5 „
„ 10th April, 1935 . . .	4½ „

For purposes of comparison, the following table sets the housing output for which private enterprise was responsible alongside the building society rate of interest for new mortgages—

Year	Housing Output	Rate of Interest
1930	110,000	6 per cent
1931	132,000	6 „
1932	133,000	6 and 5½ „
1933	169,000	5½ and 5 „
1934	260,000	5 „
1935	275,000	5 and 4½ „
1936	275,000	4½ „

It is evident that considerable increases in output coincided with successive reductions in the building society mortgage rate. This table, however, is very far from telling the whole story, for at this period the falling rate of interest was not the only factor responsible for cheaper mortgage accommodation—cheaper at least in the short run. During the year or two following the crisis of 1931 there was an intensification of building society competition, and though some features of this development were widely deplored, it gradually resulted in a general extension of the term of years over which advances were to be

repayable In the years 1931 and 1932 the great majority of the advances made by one society were either for sixteen or twenty years By 1933 the twenty-year period had been exceeded, and by 1934 an appreciable proportion of the advances were being made for terms ranging from twenty-one to twenty-five years, and this particular society by no means led the field in this connection There were thus, up to this point, two principal factors which combined to reduce the monthly outgoings in respect of every £100 borrowed The following table clearly shows the influence of these factors either singly or in combination—

TABLE X
MONTHLY REPAYMENTS PER £100, ACCORDING TO VARYING
TERMS OF YEARS AND RATES OF INTEREST

Repayment Term (Years)	MONTHLY (CALENDAR) REPAYMENT PER £100 BORROWED AT			
	6%	5½%	5%	4½%
	<i>s</i> <i>d</i>	<i>s</i> <i>d</i>	<i>s</i> <i>d</i>	<i>s</i> <i>d</i>
16	16 6	16 0	15 5	14 11
20	14 7	14 0	13 5	12 10
23	13 7	13 0	12 5	11 10
25	13 1	12 6	11 10	11 3

Obviously, it is a very far cry from 16s 6d per £100 borrowed at 6 per cent for sixteen years to 11s 3d in respect of the same sum borrowed at 4½ per cent for twenty-five years. What the precise influence of either of these two factors was, so far as the movement as a whole was concerned at any one time, cannot be established. The reductions in the rate of interest were often more or less synchronized, but the tendency towards the increasing term of years, at least in its initial phase, was a piecemeal development, and it is very difficult to make any useful generalization. The two factors were, however, working more or less concurrently towards the same end—the reduction in the monthly outgoings in respect of the sum borrowed.

Nor were these the only influences tending to facilitate borrowing. In the years preceding the crisis there had been an extension of the "pool" system of making advances on houses forming

part of an estate, and in all probability this still further extended after the crisis, or at least it became better known. In so far as it reduced house purchasers' initial deposit and left the builder to provide the necessary security, it unquestionably acted as a sales stimulant. There was one further factor which combined to cheapen housing accommodation. During the earlier part of the period concerned the price of houses was declining. It is difficult, in fact almost impossible, to measure this; certainly it was a movement which was wider than any of the indices of building costs indicates. By this time the industry was undoubtedly experiencing the economies due to the mass production of supplies—window frames, doors, fire-places, domestic stoves, etc.—that was made possible by the nature of the market and the adaptations in the technique of those who supplied the goods. Some indication of this may be obtained from the average building price, as calculated by the Ministry of Health, for non-parlour houses, with 1931-2 equalling 100—

Year Ended 31st March	Index Number
1932-3	90.7
1933-4	87.0
1934-5	90.1
1935-6	93.4
1936-7	97.6

This shows a considerable fall, especially during the year 1933-4 when, as already shown, the first stirring of housing enterprise was apparent; and the index was still at 90 in 1934-5 when housing output increased so sharply. Moreover, in many cases the builder, instead of reducing the price, put better value into the house and thus offered an improved product for a given expenditure of money. Thus the fates conspired to smooth the borrower's path.

Hitherto the position has been discussed in rather broad terms. The table on p. 429 serves to concentrate all these and other influences in so far as they were reflected in the actual repayments for given groups of borrowers in a large Metropolitan Society over the period in question.

TABLE XI
PRE-ARRANGED AVERAGE MONTHLY REPAYMENTS ACCORDING
TO SOCIAL STATUS OF BORROWERS

	During 1932	During 1933	During 1934	During 1935	During 1936
	£ s d	£ s d	£ s d	£ s d	£ s d
Wage Earner .	4 1 5	3 12 10	3 8 2	3 6 3	3 4 10
Salamed .	5 17 3	5 7 3	5 0 3	4 15 1	4 15 7
Independent (ex- cept professional)	5 2 9	4 17 4	4 8 2	4 11 4	4 0 8
Clerk .	4 12 10	4 1 8	3 15 9	3 15 9	3 16 8
Professional .	5 19 9	5 8 4	5 2 10	4 17 2	4 19 2
Labourer .	3 6 5	3 0 0	2 16 8	2 14 9	2 15 0
Miscellaneous .	4 19 6	4 11 10	1	3 18 9	3 18 0
	£4 17 6	£4 6 6	£3 17 8	£3 16 1	£3 13 10

The various categories are mostly self-explanatory, though it might be added that "clerk," while a subdivision of the "salaried" group, is given in this form because there is no further information respecting these borrowers and because it corresponds to a fairly well defined social group; this relationship also applies to "wage-earners" and "labourers"; and the group "miscellaneous" is largely composed of married women who are not, in Census phraseology, "gainfully occupied." This table shows, as nothing else could, the progressive economy of house purchase due to the factors which have been enumerated. Thus there has been a continuously downward tendency in the average monthly repayments for all groups, a tendency which was particularly pronounced between 1932 and 1934, this being the period during which the boom was gathering momentum. All groups have participated, but obviously the decline was of relatively greater advantage to small income-receivers and here labourers, wage-earners, and clerks show to particular advantage. This tendency is the more notable since the society's average advances varied somewhat over the period, being as high as £640 in 1933 and as low as £513 the following year.

As a matter of interest (since the question has often been asked but has never been answered in any detail) the following table is added to afford some indication of the relative proportions of the various groups in the same Society whose purchases in the

¹ Figure for this group not available

aggregate, if this Society's experience is representative, have resulted in the boom—

TABLE XII
SOCIAL STATUS OF BORROWERS UP TO 1930 AND DURING
SUBSEQUENT YEARS

	Up to 1930	During 1931	During 1932	During 1933	During 1934	During 1935	During 1936
	Per- centage	Per- centage	Per- centage	Per- centage	Per- centage	Per- centage	Per- centage
Wage Earner	34.8	40.8	31.0	41.2	43.3	49.4	50.5
Salaried	10.7	15.7	16.3	14.2	12.1	12.3	10.7
Independent (except professional)	15.5	13.2	17.9	14.3	12.6	11.9	13.7
Clerk	7.3	7.3	7.4	7.6	16.8 ¹	7.7	6.9
Professional	4.4	4.0	4.1	3.3	2.4	3.1	3.0
Labourer	0.6	0.6	0.5	0.8	0.9	1.2	1.3
Miscellaneous	20.7	18.4	22.8	18.6	11.9	14.4	13.9
	100.0	100.0	100.0	100.0	100.0	100.0	100.0

The proportions have not, on the whole, varied spectacularly, but wage-earners in the widest sense have steadily increased in significance (largely at the expense of the salaried group) and have latterly accounted for about half the business available.

Meanwhile, the scale on which houses had been erected over the period meant that they formed a substantial proportion of the nation's domestic investment in fixed capital. The following table reproduces Mr. Colin Clark's calculations, from which it is evident that the contribution made by housing reached impressive dimensions—

TABLE XIII
CAPITAL OUTLAY (Million £'s)

Year	Net Home Investment in Fixed Capital	Houses
1930	235	95
1931	178	87
1932	141	80
1933	168	117
1934	228	131
1935	268	145

¹ Increase due mainly to block transfer of mortgages from large public utility undertaking.

This section has ranged over wide country, but the chief points may be summarized thus. The building society mortgage service, having proved its merits before the boom started, gave the promise of the necessary financial facilities required by any expansion of output and, in the event, the societies provided funds for by far the greater part of the houses built. A variety of factors—changes in fundamental economic conditions and changes in building society technique—*combined* to cheapen materially the cost of acquiring a given amount of housing accommodation with building society assistance, the more notable factors being a gradual but in the end substantial reduction in the mortgage rate of interest; an appreciable extension of the term of years over which loans are repayable; an increase in the facilities for acquiring houses without making a large deposit, and a cheapening of and/or improvement in the quality of houses, especially in the earlier phase of the boom. While any one *may* have been of outstanding importance, there can be no doubt that the essential consideration is that they became operative *more or less* contemporaneously.

XII

The foregoing summarizes the answer to the question, "How?" The answer to the question, "Why?" is, however, even more difficult to summarize. In fact, it is tempting to doubt whether at any time in the future there will be general agreement, not only with regard to the exact forces operative but also with regard to the precise emphasis to be placed on each individual force. Yet, surveying the scene from the actual field of operations, one cannot resist the impression that on occasion there has been such a frantic exploring among the more abstruse mathematical formulae and the involutions of curves that some plain and practical points, by no means unimportant, have escaped notice.

In preceding sections reference has been made to the combination of favouring economic breezes and developments in building society mortgage technique which have resulted, judged from the standpoint of monthly outgoings, in a material cheapening of a given amount of housing accommodation. The importance of these factors should not on any account be underrated:

nor were these (shall we say regional?) favouring economic breezes alone, there were also more general favouring economic breezes. The most notable of these was, perhaps, the rising tendency of real wages over a period of years for those in full employment. As the *Economist* has put it, "Wage and salary earners . . . after buying their food, drink, tobacco, and clothes had something like £250 millions a year more left over in 1932 than in 1924-7." Moreover, these breezes were supplemented by various developments, some primary and some secondary. For instance, unimprovements in transport, and especially in flexibility, made possible the estates on the fringes of the towns; the migration of industrial population and the changing location of industrial enterprise have called forth housing accommodation; the building societies and builders have both undertaken widespread publicity with a view to impressing the public with the merits of home ownership and the attractions of the new houses. These factors, along with the rest (including normal need and any shortage remaining as a result of the war), must be given due weight. None the less, it appears doubtful whether they could, by themselves, have fanned housing output up to boom proportions unless some deep underlying force had been present. The presence of such a force, and especially in the more academic discussions of the boom, has passed almost unnoticed. It is this force, however, which, given the various favourable circumstances already enumerated, has transformed the boom from a potentiality to a reality. "Nothing in economics," says Professor Taussig, "is automatic. Everywhere we have to deal with human beings." In other words, the essential driving force behind the boom has been an almost revolutionary conception of what are tolerable housing standards among a vast section of the population. One may spread the feast and tempt the appetite, but it depends upon the public whether it is consumed. In the last analysis, therefore, much turns upon public appetite; and in the past decade public appetite has over large areas become omnivorous. Furthermore, it is an appetite which grows on what it feeds. The force of example—the fact that one's friends have moved into a new house, with all the modern amenities—is of enormous potency. The sudden emergence of this appetite must

no doubt be interpreted against a historical background. For the mass of wage-earners and small salaried workers, housing has been one of the least progressive elements in social life throughout the Industrial Revolution. In industrial areas, for instance, many families are living in houses which several generations of their forbears have occupied, despite the rise in the standard of living that has occurred meantime.

It is undoubtedly the womenfolk who are the motive force behind this changed conception of housing standards. It will bring in its train a host of problems which are outside the scope of this review, but it will be a force to be reckoned with for a number of years to come. For very many of the families the new houses have represented simply a transfer from a poorer to a better standard of housing accommodation, with little or no increase in total outgoings, or where outgoings have increased the additional burden has no doubt been considered justifiable in view of the better standard of accommodation obtained,¹ and the changes in the building society mortgage technique have simplified the process of transfer.

¹ There has not, apparently, been any extensive investigation of family budgets which contrasts the proportions of income spent as rent for rented houses and mortgage repayments for houses acquired by the occupier. In the *Review of Economic Studies* for June, 1937, however, there is an article which reproduces parts of an inquiry into the expenditure of teachers carried out for the Association of Assistant Masters in Secondary Schools (England and Wales). The following comparisons are noteworthy, although this represents an extremely small cross-section of the total borrowers—

INCOME GROUPING

	£200-£300		£300-£400		£400-£500		OVER £500	
	Rented	Mtgd	Rented	Mtgd.	Rented	Mtgd	Rented	Mtgd
Rents, Rates and Repairs	23 6	26 9	19 6	21 5	15 5	16 9	13 0	15 2

It is very noticeable that expenditure on domestic help in the case of mortgaged houses—which are probably mostly new houses—is lower than in the case of rented houses. This may be partly from necessity, but it may largely represent a real economy due to the labour-saving qualities of the new houses.

XIII

This chapter has traversed difficult country, confronted (if not successfully negotiated) numerous obstacles and perhaps now and again picked up a strong scent, though it is not claimed that there has been any kill. In these circumstances, the exhausted follower may appreciate a summary of the high-spots of the chase, which can be given in these terms—

The housing boom, starting from a considerable level of output, was due entirely to the activity of unassisted private enterprise. The initial impulse of the boom originated in the late autumn of 1932 and early in 1933, in circumstances which reflect credit upon the enterprise of the speculative builder, was translated from paper to employment on a substantial scale in selective trades in the building industry in the summer and autumn of 1933, and made the first outstanding impression on the official statistics of output relating to the half-year ended 31st March, 1934. The selective increase in employment in the building industry in 1933 was much in advance of that for the building industry as a whole (which was unquestionably a reflection of expanding housing output), and for all industries. This tendency was even more marked during 1934, but in addition the increase in activity was progressively communicated to a wide range of ancillary industries, with the result that by 1934 these industries showed an increase in employment materially in excess of that for the rest of the employment field; and the proportionate increase in employment in these industries linked with house-building showed to considerable advantage when set against the index of general business activity. These tendencies broadly continued, though not in equal degree, after 1934. Thus the conclusion is indicated that the expansion in house-building which first began to make its influence felt on employment in the summer and autumn of 1933 exercised a substantial, and probably a decisive, leadership in the country's emergence from the depression of 1931-2. Moreover, the rapid expansion in housing output was inseparably linked with the development of building societies. The changes in the technique of the societies' mortgage service, such as the gradual reduction of the rate of

interest, the extension of the term over which loans were repaid, etc., together with the decline in the price of houses, *combined* to cheapen materially the cost of acquiring a given amount of housing accommodation with building society assistance. Although the boom was made possible by these changes and other developments in fundamental economic conditions, it derived its ultimate motive force from an intensive public demand for improved standards of housing accommodation.

APPENDIX I

HOUSES PROVIDED IN ENGLAND AND WALES IN THE
HALF-YEAR ENDING 31st MARCH, 1930, AND
IN EACH SUBSEQUENT HALF-YEAR

Half-year Ending	NUMBER OF HOUSES PROVIDED BY				Total Number of Houses
	Local Authorities		Private Enterprise		
	With State Assistance	Without State As-istance	With State Assistance	Without State Assistance	
31st March, 1930	24,502	1605	590	51,788	78,485
30th September, 1930	24,550	1360	1682	55,622	83,214
31st March, 1931	27,964	2000	883	69,746	100,593
30th September, 1931	32,205	1119	983	60,044	94,351
31st March, 1932	35,371	1366	1350	68,374	106,461
30th September, 1932	31,063	690	1306	62,456	95,515
31st March, 1933	23,503	735	1187	79,556	104,981
30th September, 1933	24,474	501	1269	87,088	113,332
31st March, 1934	29,399	1466	1644	120,781	153,290
30th September, 1934	20,280	2197	937	136,965	160,379
31st March, 1935	14,143	4973	202	149,409	168,727
30th September, 1935	18,542	5687	28	125,660	149,917
31st March, 1936	27,220 ¹	908 ²	194	146,621	174,943
30th September, 1936	36,529 ¹	217 ²	112	127,727	164,585
31st March, 1937	34,638 ¹	350 ²	685	145,789	181,462

¹ Houses provided by local authorities as housing authorities

² Other houses provided by local authorities

APPENDIX II

INDUSTRIES ASSOCIATED WITH BUILDING AS CLASSIFIED
BY THE BUILDING INDUSTRIES NATIONAL COUNCIL(1) INDUSTRIES DIRECTLY DEPENDENT ON BUILDING AND
CONSTRUCTIONAL ACTIVITY

Stone quarrying and mining
 Slate quarrying and mining
 Clay, sand, gravel, and chalk pits
 Artificial stone and concrete
 Cement, lime-kilns, and whiting
 Brick, tile, pipe, etc , making
 Iron and steel tubes
 Stove, grate, pipe, etc , and general iron founding
 Heating and ventilating apparatus
 Electrical wiring and contracting
 Sawmilling and machined woodwork
 Paint, varnish, red and white leads
 Wallpaper making

(2) INDUSTRIES PARTLY DEPENDENT ON BUILDING AND
CONSTRUCTIONAL ACTIVITY

Pottery and earthenware
 Brass, copper, zinc, tin, lead, etc , manufacture
 Brass and allied metal wares
 Bolts, nuts, screws, rivets, nails, etc
 Wire, wire netting, wire ropes
 Woodworking not separately specified
 Glass (excluding bottles and scientific glass)

(3) INDUSTRIES INDIRECTLY AFFECTED BY BUILDING AND
CONSTRUCTIONAL ACTIVITY

Electrical engineering
 Electric cables, apparatus, lamps, etc
 Steel melting and iron puddling, iron and steel rolling, etc
 Hand tools, cutlery, saws, files, etc
 Furniture making
 Rubber
 Carpets
 Oilcloth, linoleum, etc
 Gas, water, and electricity supply

APPENDIX III

ESTIMATED COST OF BUILDINGS FOR WHICH PLANS
WERE APPROVED BY 146 LOCAL AUTHORITIES
IN GREAT BRITAIN

Year	Dwelling- houses	Factories and Workshops	Shops, Offices, Ware- houses and other Business Premises	Churches, Schools and Public Buildings	Other Buildings, and Additions and Alterations to Existing Buildings	Total
	(£ 000's)	(£ 000's)	(£ 000's)	(£ 000's)	(£ 000's)	(£ 000's)
1930	46,764	4,581	5475	8,402	9,383	74,605
1931	40,492	2,734	5214	7,198	7,372	63,010
1932	46,888	3,072	4748	4,668	6,878	66,254
1933	62,308	3,697	4376	5,969	7,332	83,682
1934	69,586	6,073	5021	5,872	9,011	95,563
1935	78,429	7,670	7911	9,028	11,270	114,308
1936	75,062	10,061	8753	10,809	12,347	117,032

BRIEF BIBLIOGRAPHY

Much of the matter is based on first-hand experience or inquiries either in the building industry or in the building society movement and therefore no sources can be indicated for this information. The rest of the material is largely drawn from official publications, with some from publications issued otherwise. The following is a selection of the more important of these publications—

(1) Reports of the Chief Registrar of Friendly Societies on Building Societies

(2) Annual Reports of Ministry of Health

(3) Ministry of Health half-yearly returns on Housing

(4) *Ministry of Labour Gazette*.

(5) Twenty-second Abstract of Labour Statistics of the United Kingdom

(6) Year Book and Special Memoranda issued by the Building Industries National Council

(7) *Economist*

(8) *The Thrifty Three Millions*, by Sir Harold Bellman

(A number of other sources have also been indicated in the text.)

THE COTTON INDUSTRY

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JOINT COMMITTEE OF COTTON TRADE ORGANIZATIONS

THE COTTON INDUSTRY

I INTRODUCTION. EVENTS UP TO 1932

RECOVERY in the cotton industry came later, and was on a smaller scale, than in any of the other major British industries. This contrast of experience can best be explained by reference to two facts—

1. Lancashire's post-war problem was not (as in many other British industries) that of adjusting an industry suddenly enlarged to meet the temporary needs of war-time to a lower level of peace requirements. The war provided the opportunity, and strengthened the incentive, for the development of indigenous industries in many of Lancashire's overseas markets, and left the Eastern markets, in particular, open for Japanese exports, which had already begun to increase before 1914. Most of the difficulties of the last twenty years arose from the contraction of markets.

2. The industry is not one, but a group of interdependent, though financially separate, industries, each with its own technical problem and individual outlook. It probably contains a larger number of firms than any other basic manufacturing industry.

Up to 1927 many people in the cotton industry believed that "normality" could be restored on the pre-war volume of output, and in the pre-war markets. From 1927 to 1932 there was increasing recognition in all sections that the pre-war volume was not likely to be recovered at least in the near future, but there were still those who felt that Lancashire must continue to rely on her pre-war markets and on her ability to compete in the pre-war types of trade. Experience since 1932 has further weakened this belief and has directed attention to the problems of internal organization.

Summarizing the post-war history of the cotton industry, it may be said that up to 1924 it was generally believed that, catastrophic as were the effects of the 1921 slump, they would

be followed, as had so often happened during the previous seventy years, by an equal if not a greater degree of recovery. In 1924 and 1925 the industry began for the first time to consider the need for special measures to bring back prosperity. Civic and industrial conferences were held to discuss the advisability of greater co-operation, but there was still no suggestion that changes in the structure of the industry might be necessary. By 1927 the emphasis was all on methods of reducing costs, based on concessions rather than economies. It was during this period that the spinning section showed signs of reverting to its pre-war policy of organized short time, and that the price associations in the finishing sections were most effective. The manufacturing section, which consists largely of private firms, had undergone more appreciable contraction than either of the other two sections. From 1927 to 1929, as described in *Britain in Depression*, much attention was paid to "through-ticket" schemes, and other projects for inter-sectional co-operation which did not involve any cession of sectional independence. From 1928 to 1931, Lancashire was much impressed by the example of successful amalgamations in other industries, a movement which seemed likely to spread to the cotton industry, encouraged by the Government and the City. In 1929 the Lancashire Cotton Corporation was formed, with the financial assistance of the Bank of England, partly with the object of buying and breaking up redundant plant in the American spinning section. At the same time, Combined Egyptian Mills was established in the fine spinning section, and the Quilt Manufacturers' Association in the manufacturing section. But these remain the only large-scale amalgamations of the last ten years.

No sooner had these great combines been established than the world depression, accentuated by raised tariffs and later by other forms of trade restriction, created new difficulties for the industry. The purchasing power of export markets was further reduced. Lancashire's recent scepticism of the advantages of amalgamation may be due partly to the unfortunate circumstances in which the latest combines began their lives.

In 1931 the world demand for cotton textiles began to recover from the depression. But, apart from certain temporary gains

due to the depreciation of sterling, Lancashire gained little from the revival of world trade. Almost the whole advantage of world recovery was captured by the Japanese cotton industry.

By this time, the need for a new policy in the cotton industry had become evident, it was widely recognized, in particular, that the foundation for a new policy must be the reduction of surplus productive capacity, which not only made short-time operation almost universal, but also led to such severe price-cutting that few firms in any section were able to show a profit. It is true that a great number of concerns had been forced out of the industry, but in early 1931 the proportion of actual to potential production was about 58 per cent in spinning, 49 per cent in weaving, and about 55 per cent in finishing. In 1931 the Joint Committee of Cotton Trade Organizations put forward a series of recommendations, providing both for the reduction of surplus capacity and for other measures (amalgamations, co-operation between sections, standardization, changes in marketing) which were intended to increase the efficiency of the industry. These proposals, though supported by most of the leaders of the industry, were not accepted by any section as a whole. Thus the cotton industry entered the period of general recovery with its structure still ill adapted to the permanent change in demand.

II. CHANGES IN PRODUCTION AND TRADE

From 1931 until late in 1936 there was a slow revival in yarn production, but output of cloth remained almost unchanged. The finishing trades were hardly affected by the improvement. A great part of the weaving industry, during these years, was adapted to the weaving of rayon, and especially of staple fibre and mixture cloths; the expansion of demand for these products, however, barely offset the decline of cotton. Cloths wholly or partly of rayon have nevertheless become an important part of Lancashire's output; the industry is changing into a mixed textile industry.

Its balance has also been shifting in another direction. The trend of demand has steadily reduced the average count of yarn spun. Production of medium (especially American) counts has shrunk in relation both to coarse and fine yarns. Hence spinning

mills have tended to turn to spinning counts lower than they were designed to produce. This change is associated with still another. A larger proportion of cotton yarn is now going into uses other than weaving. Exports of yarns, the hosiery industry, industrial uses (e.g. for tyres) have become relatively more important. Thus the integration of the several branches of the cotton industry is being broken down, spinners are selling a smaller proportion of their output to the weavers, while the weavers, through the use of rayon, are taking a smaller proportion of their material from the spinners. Changes in demand were originally responsible for these transformations of the structure of the industry, but both spinners and weavers have proved adaptable to new requirements and have been ready to exploit new markets.

TRADE REGULATION AND LANCASHIRE'S EXPORTS. The failure of export markets to recover from the low level they reached in the depression is the reason for Lancashire's slow progress. There was, it is true, a temporary increase in exports in 1932, after the depreciation of sterling, and the end of the Indian boycott of British goods in 1931. The recovery, however, was not maintained, and from 1932 to 1936, although yarn exports continued to increase, the volume of exports of cotton piece goods was slowly declining. In the largest market, India, the recovery in consumption was diverted mainly to the home industry by high tariffs, in many other markets, the advantages of returning prosperity went to the Japanese cotton industry, temporarily stimulated by the depreciation of the yen at the end of 1931. Within four years—1931–5—the volume of Japanese exports of cotton goods was almost doubled. (See Table II in the Appendix.)

The course of British trade in cotton goods has been deeply influenced by British financial and commercial policy. The formation of the sterling bloc after Great Britain's departure from the gold standard in 1931, the Ottawa agreements of 1932, and the trade agreements with the Scandinavian countries and Argentina in 1933, have all been of the greatest importance to Lancashire. It is difficult to isolate the results of these events, but it seems probable, on balance, that the creation of the sterling

bloc did more to stimulate British trade with the countries concerned than the Ottawa and other trade agreements.

The results of Ottawa, indeed, were widely regarded in Lancashire, as in other export industries, as disappointing. The undertakings of India and the Dominions in regard to tariffs and preferences were indeterminate, and it was some years before they were implemented. Seen in the perspective of five years, however, Ottawa has perhaps been more fruitful than was at first thought possible. It is true that the Indian tariff—the greatest single cause of Lancashire's loss of trade—has undergone only a minor reduction, and British exports to India have fallen almost every year since 1932. On the other hand, the drastic protectionism which distinguished Australian policy during the depression has been modified to our advantage, and in Canada a Tariff Board inquiry was followed by substantial concessions in the Canadian Budget of 1935, which were reinforced in the new trade agreement of 1937. There can be little doubt now that the right of audience before the Dominion Tariff Boards, which was a feature of all the Ottawa agreements, has proved a useful concession.

Since 1932 the Scandinavian countries, and particularly Denmark, have been growing markets for Lancashire cotton goods. In Argentina, too, there was for a year or two a substantial increase in purchases of British cotton goods, but since 1934 Japanese competition has reduced British trade.

The Crown Colonies are the only group of markets to which British exports of cotton goods have shown a really substantial expansion in recent years. In most of them British trade in cotton goods had been almost submerged by Japanese competition in 1934. After an unsuccessful attempt, early in 1934, to reach an agreement on markets between the British and Japanese cotton industries, the British Government imposed quotas in most of the Crown Colonies, limiting cotton and rayon imports from all foreign sources to the level of 1927-31. The quotas, together with the revival in colonial purchasing power, led to the doubling of British textile exports to the Crown Colonies between 1934 and 1936.

Lancashire's export trade is thus becoming increasingly

dependent on the Government's commercial policy and on the special advantages which can be obtained by negotiation for British goods in Empire and foreign markets. In 1937, 19 per cent of British exports of cotton piece goods went to India, 23 per cent to the Dominions, 16 per cent to the Colonies in which quotas are imposed, and 14 per cent to the principal European and South American countries with which we have trade agreements (See Table III in the Appendix.) These developments have certainly modified the direction of British trade, but it is at least possible that their indirect effects in other countries may have contributed to the reduction in total exports.

THE HOME MARKET. In the home market, the demand for cotton and rayon goods probably increased in 1932 and 1933, but from 1933 to 1935, consumption remained almost unchanged. Reviving prosperity, it appears, was accompanied by increased purchases of other textiles, notably silk and linens, but not of cotton. In 1936, home demand for cotton goods increased and was probably rather greater than in 1929.

Prices, like production, failed to follow the normal course of recovery until 1936. Spinners' and manufacturers' margins, and finishing charges, increased very little—though spinners of coarse counts, as will be shown, were able to increase their margins by collective agreements. Thus, although losses were diminishing, few firms were making profits before 1937.

THE RECOVERY OF 1936-7. From the autumn of 1936, conditions over a great part of the industry were appreciably better for several months. The general rise in commodity prices, together with the normal seasonal buying movement, resulted in an exceptional increase in orders for yarn and, to a less extent, for cloth, in the later months of 1936. Production and deliveries—both for the home market and for exports—increased substantially. The spinners extended the range of their price agreements, and yarn margins rose considerably, up to the summer of 1937. Manufacturers also increased their margins in the early part of 1937, but in the finishing trades only the bleachers were able to make a general increase in the price-lists. Export prices were raised, and exports in the first part of 1937 were for the first time since 1932 in excess of the previous year. After the

summer of 1937, demand began to fall off; it became evident that many of the orders booked early in the year were made in anticipation of rising prices, and were not justified by current demand. Manufacturers were obliged once more to reduce their margins, but the spinners have been able to maintain higher prices as a result of their agreements, in the face of falling demand, and are in a very much better position than they were before 1937.

Even in 1936 and 1937, although production of cotton yarn was rather greater than in 1929, production of cotton and rayon piece goods was only about three-quarters of the production of 1929, and only half of the pre-war output. Exports of cotton piece goods in 1936 and 1937 were little more than half in quantity of the exports of 1929, and less than 30 per cent of the pre-war exports (See Table I in the Appendix)

The outlook early in 1938 was extremely uncertain. Home sales were falling, and there was evidence that the optimism of early 1937 had led to over-buying. In certain export markets there were signs that the recent fall in commodity prices was leading to a reduction in the power to buy imported manufactures. Lancashire depends very largely on the prosperity of primary producing countries. Because of the development of the Indian cotton industry and the success of Japanese competition, the British cotton trade failed to derive the expected benefits from the general economic improvement in its export markets, and—if 1937 should prove to be the peak of a trade cycle—it appears that Lancashire entered upon recovery only just before its ebb. This, unfortunately, is no reason why it should not be susceptible to the influence of another depression. It is believed, however, that by drastic internal reorganization the cotton industry could materially improve its position. The next section describes the various efforts that have been made—now, apparently, with considerable hope of success—to combine the forces of the industry for this purpose.

III. THE TREND TOWARDS REORGANIZATION, 1932-8

For the whole of the past five years the cotton industry has been fully conscious of the need to reorganize. There has been less agreement, however, on the form which reorganization should

take In 1932, the Joint Committee's scheme of 1931, described in *Britain in Depression* as "perhaps too rational for common acceptance," had been rejected by the trade. It was then agreed that since the industry was evidently not prepared for a general, all-embracing scheme, each section should proceed as far as it could on its own initiative. Between 1932 and 1937 considerable progress towards an agreed solution of some, at least, of the difficulties of the industry was made within each of the main sections. But it was not until 1937 that it became possible to consider once again a set of proposals framed in the interests of the industry as a whole.

SPINNING. Reorganization moved more rapidly during these years in the spinning section than in any other part of the industry. One of the significant factors in this movement was the lead taken by the Lancashire Cotton Corporation after changes in its management and general policy during 1932. After that year the Lancashire Cotton Corporation, whose attempt to restore the trade by drastic surgery had failed (not entirely through its own fault), devoted its efforts to bringing about some measure of co-operation among spinners.

The first step was the formation of voluntary price agreements among certain sections of the spinners in 1933. Although temporarily successful in raising margins, the schemes broke down after a few months. In one branch of the trade—the section spinning coarse counts up to 26's, concentrated in Royton—the voluntary agreement was replaced, on the initiative of the Lancashire Cotton Corporation, by a "legally binding" agreement; a large majority of the spinners concerned bound themselves to observe certain minimum margins (laid down from time to time by an elected committee) and agreed to the imposition of fines on mills found to be quoting lower prices. The agreement, applying to a class of yarn for which demand has been expanding, has been periodically renewed since 1934; margins were raised nearer to a profitable level, and in the few cases where non-observance of the prescribed prices has been proved, the fines have been imposed and paid.

In the autumn of 1936, trade prospects became brighter than they had been for some years. As has been shown, the favourable

conditions were to some extent illusory. Yet customers were sufficiently convinced temporarily to change the market for yarn and cloth from a buyers' to a sellers' market. The opportunity afforded by rising margins to strengthen the position of the industry was taken by the spinners. Efforts were made to extend the legally binding price agreements to other branches of the spinning section. At the end of 1936 spinners of American medium count mule yarns began to operate an agreement. In March, 1937, an agreement came into force covering all Egyptian and fine count American yarns. Ring spinners of American yarn had not been included in the previous agreements and it proved more difficult to secure the necessary support, though a voluntary understanding on margins was agreed to by most of the firms concerned. In this branch a legally binding agreement was not signed until November, 1937, and comprised only medium counts. By then, however, practically every branch of the spinning trade (except coarse count ring yarns) was operating under legally binding agreements covering about 90 per cent of the firms concerned.

The different agreements are co-ordinated, in so far as spinners in each agreement undertake to conform to the provisions of the other agreements if they should extend their range of production. Moreover, the same officials are to a large extent in charge of the various agreements.

While spinners were dealing directly with the problem of prices through the price agreements, a simultaneous attack was being developed on surplus capacity in the spinning section. The rejected 1931 proposals of the Joint Committee included the elimination of redundant plant in every section, in 1934 the scheme was revived in the spinning section by the Federation of Master Cotton Spinners' Associations, which proposed at the same time the establishment of a Cotton Spinners' Association with general powers over spinning output and prices. On a ballot the proposal for a Spinners' Association was defeated, but the suggestion of a surplus capacity scheme was on this occasion approved by a substantial majority. It was recognized that such a scheme must be compulsory and, therefore, embodied in an Act of Parliament. After lengthy negotiations, the Government

promoted a Bill providing for the appointment of a Spindles Board to purchase and scrap redundant spinning plant, to raise a loan for this purpose, and to impose a levy on the industry for interest charges and its own expenses. No indication was given in the Bill as to what extent existing plant was believed to be redundant.

When the Spindles Board began to operate, in September, 1936, it was estimated that the total unused capacity in the spinning industry was 10.6 million mule equivalent spindles, out of a total capacity of 46.0 millions. It was not, of course, suggested that all of these unused spindles were to be regarded as a permanent surplus, but the figure of 10.6 millions, after allowance had been made for a reasonable reserve, set the upper limit to the scrapping policy of the Spindles Board.

It has sometimes been suggested that the activities of the Board contributed to the temporary shortages of yarn experienced during 1937, and to the raising of yarn margins. While the removal of potential competition can hardly have been without effect, there are other considerations to be borne in mind. During its first year the Spindles Board bought $3\frac{1}{4}$ million spindles. These purchases, together with the increase in production during the same period, reduced the amount of unused capacity by September, 1937, to about 3.9 million spindles. There was accordingly a fall in the unused capacity of 6.7 million, of which purchases by the Spindles Board accounted for about half. The Board's purchases, moreover, were mainly confined to mills that had already been closed for a considerable time, and which could not in any case have been reopened without substantial expenditure. In September, 1936, about seventy-six spinning mills had been completely shut down for at least six months. Forty-eight of these were bought by the Spindles Board during the following twelve months; only eleven were reopened for production, notwithstanding the greatly improved profitability of the spinning section.

In 1936-7, too, the better prospects of the spinning section made it possible to begin the reorganization of the capital structure of the industry. Over-capitalization of a large number of spinning companies in 1919-20 had led to the accumulation

of huge debts and of intolerable burdens of interest charges.¹ The first important move towards reconstruction was made in the autumn of 1936, when the Lancashire Cotton Corporation produced a drastic scheme, reducing its capital from £12·1 million to £4·5 million, and the balance sheet valuation of its fixed assets from £9·1 to £3·2 million. Many small companies, and some of the other spinning combines, following the example of the L.C.C., have reduced their balance sheet totals to levels at which a reasonable rate of profit might be shown, and which have brought within sight the payment of ordinary dividends.

MANUFACTURING The manufacturing (weaving) section was suffering in 1934 from widespread cutting of wage-rates. Many mills were paying wages less than those provided by the agreement between the employers' association and the trade unions concerned. The majority, both of employers and operatives, were strongly opposed to this development, the employers regarding it as an unfair form of competition, both sides were anxious to make payment of the collectively agreed wage-rates compulsory throughout the trade. At the same time the employers held that the breakaways from the agreed wage-rates showed that these rates were too high. On the application of employers and operatives the Government introduced the Cotton Manufacturing Industry (Temporary Provisions) Act, 1934, which empowered the Minister of Labour to give compulsory effect to wage agreements between representatives of employers' and operatives' organizations. A new wage-list was then negotiated, and included several important departures from the previous wage-system. The general effect was to reduce the wage-rates of operatives on four looms, and to raise the wage-rates of operatives working more than four looms.

Although the Cotton Manufacturing Act resembles in some respects the Trade Board Acts, the expressed intention of its promoters among the employers was to stabilize one element in the competitive position.

Apart from this Act there were few practical results of the reorganization movement in the manufacturing section. A special committee, appointed by the Manufacturers' Association in 1934 to review the state of trade and to prepare proposals, circulated

in 1936 a uniform costings system, which has probably helped to reduce the quoting of prices below costs so far as this is due—as it is fairly frequently—to ignorance of his real costs on the part of the manufacturer. In 1937 an unofficial group of manufacturers—the Burnley Cotton Industry Study Group—invited opinions on the general principle of central control of the industry, and on three proposed reorganization schemes. Firms owning about a third of the looms in the industry replied, and nearly all appeared to be prepared to accept some degree of central control, on a compulsory basis.

WAGES. At the end of 1936, the operatives in both the spinning and weaving sections of the industry claimed the restoration of the wage-cuts that had been made in 1929 and 1932. The negotiations, as has so often happened in Lancashire, were troublesome and long drawn out, and strikes were only narrowly avoided. Under the eventual compromise wage-rates in the spinning section were increased by 5·6 per cent, with greater advances for certain low-paid grades. In the weaving section, the advances varied, some readjustments being necessary as a result of the operation of the new wage-list drawn up in 1935. The average advance in rates was probably between $7\frac{1}{2}$ and 10 per cent. Attention had frequently been called to the very low individual earnings of certain weavers due to under-employment, the Weavers' Amalgamation renewed its long-standing claim for a minimum wage of 30s. a week (later 35s.) for adult weavers, the employers were unable to grant this, but better trade reduced for a time the amount of under-employment.

During the past year or two there has been in many parts of Lancashire the paradoxical—but not nowadays unfamiliar—situation of considerable unemployment accompanied by a shortage of certain types of labour. With the rise of new industries in Lancashire, the cotton industry's attractions for juvenile labour are less than they were, and it has proved difficult to secure a sufficient number of juvenile assistants—for many of whom, in present circumstances, the cotton industry must be a blind alley occupation. The shortage is particularly acute in spinning; the difficulty here is that each pair of mules is traditionally tended by a spinner and two assistants (piecers). Unless

trade expands it is clearly impossible for both the assistants to find work later as spinners. Other methods of organizing the work have been proposed but it has only recently become possible to arrange for serious consideration of alternative systems. In 1937, however, a joint committee of employers and operatives was established to consider the reorganization of labour in the spinning room.

THE FINISHING SECTIONS. Until 1930 the finishers had remained relatively prosperous. Partly because of the predominance in each branch of long-established combines—the Bradford Dyers' Association, the British Cotton & Wool Dyers, the Calico Printers' Association, and the Bleachers' Association—the finishers had been able to maintain price agreements, and, as compared with the rest of the industry, their profits. The depression, however, broke down the price agreements and led to severe price-cutting while the decline in trade caused a serious problem of over-capacity. It became evident that voluntary price agreements were no solution for the serious difficulties with which the finishers were confronted. At the same time the conditions of the trade, and particularly the need for a reserve capacity to cope with fashion and style changes, made the problem of eliminating surplus capacity far more complicated than in spinning or weaving.

Dyers and printers, working independently along similar lines, produced, in 1935 and 1936, schemes to regulate output by means of pools and quotas, accompanied by provision for the purchase and scrapping of redundant plant. It was intended that the schemes should encourage the concentration of output, the penalties for excess output, and the compensation for output less than the quota, were to be calculated so as to make it more profitable for the high cost firm to refuse an order than to accept it at a price less than the cost of production. At the same time, compensation was not to be given indefinitely to firms producing substantially less than their quotas, thus it was hoped that the high cost firms would eventually give up their quotas and go out of production. The schemes also provided that new plant should not be installed, by new or existing firms, without the permission of the committees controlling the schemes.

Although the schemes, when submitted to the firms concerned, were approved in both cases by large majorities, it was recognized that they were not likely to be effective unless they were made compulsory. It was decided, therefore, to apply to the Government to give effect to the schemes by Act of Parliament.

"LANCASHIRE'S REMEDY." In 1936 and 1937, while these developments were in progress in each section, serious consideration was being given to the possibilities of reviving plans for a more comprehensive reorganization of the industry as a whole. It was generally felt that the chances of such a plan succeeding were by now far more favourable than they had been in 1931-2. In November, 1936, at a meeting of the Joint Committee of Cotton Trade Organizations, Sir John Grey, Chairman of the Cotton Spinners' & Manufacturers' Association, outlined the general policy which was later to be adopted by the industry. He suggested an Enabling Act under which each section of the cotton industry could apply, by a majority decision, compulsory schemes of reorganization to all firms within the section. A central authority would supervise and co-ordinate the sectional schemes, and lay down the basis of a united policy. Thus each section would be able to work out the solution to its own problems within a general framework.

For the time, however, progress along these lines was postponed, for the Government still had under consideration the schemes proposed by the dyers and printers. It was realized that future developments must largely depend on the Government's attitude to the principle of statutory enforcement of majority decisions contained in these sectional proposals.

In July, 1937, the President of the Board of Trade told the industry that the Government could not accept the dyers' and printers' schemes, mainly because they would restrict the entry of new firms into the industry, and because they were not related to the problems of the cotton trade as a whole. He stated, however, that the Government would be prepared to introduce legislation, if necessary, to assist the reorganization of the cotton industry as a whole, on "lines of which the Government and Parliament approve," and invited the Joint Committee to prepare

a scheme of this kind, which must be directed in the first place towards the improvement of export trade.

In accordance with the President's invitation, the Executive of the Joint Committee began to work out a scheme on the lines suggested by the President, and advanced by Sir John Grey on behalf of the Executive of the Joint Committee during the previous year. In October, 1937, the scheme, under the title "Lancashire's Remedy," was published and submitted for the consideration of all organizations in the industry. Within less than two months the associations representing the employers, and the trade unions, in every section of the industry, had expressed their approval of the principles of the scheme. At the end of December the proposals were submitted to the Board of Trade, and the President was asked to say whether the Government would be willing to introduce a Bill to give effect to them.

Thus by the end of 1937 the organization had for the first time accepted a general plan. Among the chief reasons for the wide approval of the principles laid down in "Lancashire's Remedy," three are of special importance. The first is the situation within the industry the rapid development in the last five years of sectional schemes, particularly in spinning, has at once helped the rest of the industry to take a more sanguine view than it has taken in the past of the possibilities of some degree of central control, and at the same time made it appear desirable that sectional and voluntary schemes on these lines should be brought within a more comprehensive framework. The second factor is the striking growth of State intervention in international trade all over the world, methods of trading and organization built up to serve a free world market have had to be adapted to new conditions. The third factor is the growth of State intervention in other British industries. The cotton industry's costs of production have been raised, partly as a result of State-supported schemes in other industries, whilst the limitation of imports, particularly of agricultural products, has affected the purchasing power of many of Lancashire's chief markets. With the examples of other industries before them, few people in the cotton industry can fail to be conscious both of the benefits to be derived from

statutory powers of control, and of the defects to which such schemes are often subject

THE PROPOSED ENABLING BILL. The machinery for reorganization had to be designed in such a way as to combine comprehensiveness and effectiveness with the flexibility required for competition in world markets. It is generally agreed in Lancashire that once the machinery has been established, there will be little difficulty in formulating policy. At various times in the past ten years, the trade organizations have been able to register almost unanimous approval of policies. That little progress has resulted is due mainly to the lack of any machinery or authority to execute a policy.

The Joint Committee's proposal is that the Government should introduce a Bill under which a *Cotton Industry Board* of twelve members, representing every section of the industry, including the operatives, and an independent *Advisory Committee* of three persons not connected with the industry, should be appointed by the Government. The functions of these bodies would be to examine schemes brought forward on behalf either of the industry as a whole or of individual sections. The promoters of such schemes would have to show that they were supported by a majority of those concerned, that they contained sufficient safeguards against abuse—and particularly against monopolistic abuse—that they were in the general interests of the industry, and that they would tend to assist export trade. The objects of such schemes could include the elimination of surplus capacity, the fixing of minimum prices, and the legalization of wage and other agreements between employers' and operatives' organizations. For these purposes, levies may be imposed where necessary on the firms concerned, and money may be borrowed.

A sectional scheme for any of these objects, which conforms to certain conditions and is approved by the Cotton Industry Board, the Advisory Committee, and the Board of Trade, must be submitted to Parliament in the form of a draft order.

In addition, the Cotton Industry Board should, it is proposed, have power to impose levies to promote or assist research, both technical and economic, publicity, and the collection and circulation of information, provided that such schemes are in the

interest of the industry as a whole. The Board may also authorize special "marketing schemes" to further the export of particular cloths to particular markets. These schemes must be recommended in the first place by an *Export Trade Development Committee*, set up from among the Board's members, but with power to co-opt other persons with special knowledge.

These proposals, although accepted by the trade organizations, have encountered some opposition within the industry, and have been criticized by representatives of other textile industries on the ground that they would be adversely affected. In June, 1938, the President of the Board of Trade announced that the Government intended to prepare a Bill based on the general lines of the Joint Committee's proposals, with such modifications as might appear necessary on grounds of general policy or to obtain the greatest measure of common support.

Numerous discussions followed between the Joint Committee and other organizations and firms in the cotton industry, including representatives of opposing firms. Modified proposals were approved by the Joint Committee at the end of July and submitted to the Board of Trade, with a view to a Draft Bill being prepared for submission to the trade during September.

The main effect of the modifications is to clarify and simplify the original proposals. It is provided that minimum prices can only be given statutory authority if an impartial investigation shows that they are not more than sufficient to give a reasonable profit to efficient, reasonably financed concerns, working full time. The Cotton Industry Board can authorize the firms concerned to accept lower prices where it is satisfied that such concessions are necessary to maintain or expand trade.

Schemes will not be considered unless supported by a majority of the firms concerned, controlling at least two-thirds of the capacity or turnover of the section. They may be terminated on the request of a majority of the section or on the recommendation of the Cotton Industry Board, if they are found to be working inequitably.

APPENDIX

TABLE I
PRODUCTION AND TRADE OF THE UNITED KINGDOM COTTON
INDUSTRY, 1912-37

	1912	1924	1930	1933	1935	1937
PRODUCTION						
Cotton Yarn (Million lbs.)	1983	1395	1047	1180	1225	1350 ²
Cotton Piece Goods (Million square yards)	8050 ¹	6026	3399	3504	3354	—
Rayon and Mixture Piece Goods (Million square yards)	—	—	180	369	424	—
EXPORTS						
Cotton Yarn (Million lbs.)	244	163	137	135	142	159
Cotton Piece Goods (Million square yards)	6913 ¹	4444	2407	2031	1948	1922
Rayon and Mixture Piece Goods (Million square yards)	—	—	66	54	52	78
EMPLOYMENT (000's)	712	610	463	442	427	445 ²
PLANT						
Spindles in Place (Million mule equivalent)	61.4	63.3	63.2	55.0	48.2	44.1
Looms in Place (000's)	800 ²	792	650	600	530	505 ²

¹ Million linear yards² Estimates

TABLE II
EXPORTS OF COTTON PIECE GOODS FROM CHIEF EXPORTING
COUNTRIES

	1910-13 Av	1924	1929	1931	1933	1935	1936	1937
	Million square yards							
United Kingdom	6664.9	4444.0	3671.6	1716.3	2031.2	1949.1	1916.6	1921.9
Japan	156.0 ¹	960.1 ¹	1790.6	1413.8	2090.2	2725.1	2709.9	2644.0
U.S.A.	394.5 ¹	477.8	564.4	367.0	302.0	185.6	200.5	236.2
	Thousand quintals ²							
Italy	412.0	515.2	567.4	382.0	289.8	234.4	241.3	448.2
France	405.0	570.4	535.7	372.0	380.2	346.7	357.2	345.3
Czechoslovakia	—	311.5	361.2	217.1	71.0	64.5	66.9	81.3
Holland	—	197.7	303.6	209.8	76.6	103.4	126.6	227.0
Belgium	272.1	143.0	280.1	214.2	158.2	169.7	192.1	161.7
Germany	398.6	188.1	200.3	138.9	72.8	95.7	159.6	211.8
Russia	—	—	132.3	158.6	153.0	191.7	173.9	200.0
	Million linear yards							
India (by sea)	89.2	169.0	145.9	98.9	59.1	68.1	85.8	149.1

¹ Million linear yards.² 1000 quintals is, very approximately, equivalent to 1 million square yards.

TABLE III
UNITED KINGDOM EXPORTS OF COTTON PIECE GOODS TO GROUPS
OF MARKETS

	1929	1931	1932	1933	1934	1935	1936	1937
	Milhon square yards							
TOTAL	3672	1716	2197	2031	1994	1949	1917	1922
India ¹	1374	390	599	486	583	543	416	356
Dominions	340	258	314	384	412	389	405	450
Quota Colonies ¹	266	143	250	171	142	275	310	301
Twelve Trade Agreement Countries ²	308	229	245	306	314	274	267	278
All Other Countries	1384	696	789	684	543	468	517	537

¹ I.e. the British Colonies in which quotas on imports of certain foreign textiles were imposed in 1934.

² Norway, Sweden, Denmark, Finland, Latvia, Lithuania, Yugoslavia, Poland, Turkey, Argentina, Uruguay, Peru

THE WOOL TEXTILE INDUSTRY

By A. N. SHIMMIN, M.A.

UNIVERSITY OF LEEDS

THE WOOL TEXTILE INDUSTRY

THE account of the depression in the wool textile industry which was given in *Britain in Depression* brought the record down to the end of 1933 and indicated that one of the major problems was the loss of exports. In the period of recovery between 1933 and 1938 that problem persisted. Such improvement as did occur was very largely the outcome of an improvement in the home market, but this in itself has not proved sufficient to bring the industry back to a state of full activity. It is not surprising therefore that the process of recovery was accompanied by growing concern about the redundancy of plant. Schemes of control and planning have come to be looked upon with much closer attention than they could possibly have commanded ten or twenty years ago.

In 1934 there was a further fall in the total of insured operatives in the industry. Part of this loss may be explained by improved methods of production, but in the main it must be regarded as a continuation of the contraction that had taken not less than 30,000 workers out of the industry in a period of ten years.

That such a position should develop in years in which the retained imports of wool had risen steadily constituted one of the riddles of the industry. The substitution of cheap wool for relatively dear rags might be offered as one explanation, but in this year the suspicion grew that stocks of wool must be considerably larger than was generally supposed. Serious concern began to manifest itself about the ability of the industry to consume the full supplies of raw material.

That concern was based upon the sluggishness of overseas trade, because although in 1934 there was some improvement in exports, the advantage established in the early months of the year was not maintained, particularly in the case of worsted goods. It was also realized that the revival in 1933 was largely based on demand in the home market. It was not to be expected that the home market would compensate fully for the loss of the

export trade, and the President of the Board of Trade was already suggesting that we might be reaching the limits of the home market

This meant in the wool textile industry that the pressure on the home market steadily increased in the search for compensation for the limited supply of export orders, and 1934 will be remembered as a year in which much business was done at hard cut prices

Price-cutting raised the question of whether the contraction of the industry should be effected haphazardly or by some planned scheme. This issue was to come up again within the next year or two. For the time being the industry was content to rely upon the process of free competition.

Another question raised by the need for renewing the economic strength of the industry was the place of technological research. Wool is no longer supreme in its own right. The advent of synthetic fibres has presented a strong challenge, and it is increasingly realized that prosperity for the industry depends in large measure upon the extent to which such deficiencies of wool as the tendency to shrink and discolour may be overcome by scientific investigation.

The year's trading returns for 1934 revealed much more substantial progress in the sale of woollen fabrics than in the sale of worsted fabrics in overseas markets. This recalls the point that was put to the Balfour Committee in 1925, that the manufacture of woollens seemed to be increasing at the expense of worsteds. Another point in the same connection is suggested by the Board of Trade index of production. In 1934 the woollen and worsted index stood appreciably below the 1924 level, but the hosiery index stood well above. If this means that there is a greater future for knitted fabrics, the reaction on the loom areas of the West Riding may be serious. And if woollens are to make progress at the expense of worsteds the existing localization and specialization of the industry may well suffer appreciable changes within the next few years.

The remaining outstanding experience of the industry in 1934 was the break in prices in the wool market. From the low position of March, 1933, wool rose in value within twelve months by

70 per cent or 80 per cent, and between March and September, 1934, lost practically all the ground gained. This bald statement covers one or two important points. In the first place, early in 1933 wool was seriously under-valued, so that the heavy percentage increase in price served only to bring wool into line with the general trend of wholesale prices in 1934. In the opening months of the year confidence in the raw material was strong and prices were expected to hold until the new clip began to come into consumption about September, but the dramatic collapse in values carried the gold price of wool to a lower point than that at which it stood when we went off the Gold Standard in September, 1931.

The sudden break in prices in March, 1934, followed the announcement that Germany was about to place an embargo on wool imports. The threat of an embargo by a country using over 300,000,000 lb. per annum created the fear that there would be a heavy surplus before the end of that season. The fear proved to be unfounded because Germany's consumption did not slacken off until August. This means that Germany's announcement produced a psychological effect out of all proportion to her actions in the wool market. If that market had been armed with ample data about stocks and the rate at which wool was passing into consumption it is safe to say that the unwelcome collapse of these months would have been avoided.

The year 1935 proved a welcome change from the uncertainties of the previous three or four years. Production as measured by the Board of Trade index rose from 105 in the first quarter of the year to 117 in the fourth quarter—the highest figure recorded since March, 1934. A substantial increase in the export of tops (combed wool) was due principally to heavy buying by Germany. Exports of worsted yarns showed little change, but exports of woollen fabrics increased, and so did exports of worsted fabrics. Unemployment amongst insured operatives fell from 17 per cent in January to less than 8 per cent in December. In March-April the raw materials market began to recover from the collapse that occurred in 1934, and the price index for merino wool rose from 44 in March to 56 in November (1926-28 = 100). The improvement in prices, sales and employment checked the

pessimism that had accompanied the crumpling of business in 1934.

If optimism is too strong a term, it might be said that in 1935 hope was revived that the industry might experience an appreciable degree of rehabilitation. Data subsequently published indicate that there was some ground for the hope. The production of woollen and worsted tissues, which had fallen to 316,000,000 square yards in the depression of 1930 had increased again to 405,000,000 square yards in 1935—a figure within 35,000,000 square yards of the production in 1924, which is still spoken of as the best pre-war year. But of the 405,000,000 square yards produced in 1935 only 109,000,000 were exported compared with 221,000,000 in 1924. A reduction of retained imports of similar cloths from 27,000,000 square yards in 1924 to approximately 4,000,000 in 1935 meant that the total consumed in the home market in 1935 was 300,000,000 square yards compared with 246,000,000 in 1924.

This increase in home consumption directs attention to two points. The first is the change in the proportions of home and export trade. Prior to the depression of 1929–31 home trade and export trade shared the production of cloth almost equally. In the post-depression years exports have claimed little more than a quarter of the total production. In other words the industry is now dependent upon the home market to the extent of three quarters of its production. The second point is the claim of the protectionists that a duty would reveal a larger home market than had been suspected in the days of unrestricted competition. This claim has a limited measure of support from the figures quoted above, but subsequent experience has shown that protective duties in themselves have not proved adequate to the maintenance of the full employment of machinery and labour in the industry. Once more attention has been directed to the problem of restoring the export trade.

In 1935 the legitimate pleasure at the improvement in trade was tempered by yet another reduction in the number of insured workers in the woollen and worsted industry. In July, 1935, the estimated number of insured workers was 221,720 compared with 229,590 in 1934 and 230,800 in 1933. There can be little doubt

that the difficulty of regaining the export trade in fully manufactured fabrics to which reference has been made above played an important part in this reduction of staff.

The industry found itself seeking an escape from a dilemma. A secure home market was desired at the same time as an expanding export trade. The process of closer protection of the home market by all countries inevitably reduced the volume of international trade and quickly tempered wool textile opinion on the question of quotas. An initial acceptance of quotas and other restrictions, as a reply to the disordered state of currencies, was replaced by a desire to multiply bilateral treaties.

Unfortunately for this newly found faith the reviews of trade issued by the League of Nations explained at some length that the spread of bilateralism might prove a limiting influence on the course of international trade. The growth of textile industries abroad during the preceding seven years was declared to be both the result of the depression and an obstacle to its disappearance.

A knowledge that many of the restrictions on trade owed their origin to disordered currency conditions was realized in the industry, but that did not produce any unanimity of opinion on the question of currency policy. The problem of currency stabilization was viewed as something rather remote. It might be important in the long run but it was not a matter on which the employers and the operatives could take action.

We shall get closer to the things that did interest those in the industry at this time if we turn to the suggestion made by the chairman of the Bradford Dyers' Association at its Annual Meeting. Once more he drew attention to the danger of industry reorganizing by the financial exhaustion of a number of firms. He presented as an alternative the possibility of closing down redundant plants under a co-operative arrangement, whereby the remaining members would bear the cost involved. It was argued that competition in industry is out-dated, for while it may be a useful influence when an industry is expanding, "it acts very detrimentally when the reverse is the case." Competition then brings disaster, not recovery. Then followed a plea for an Enabling Act "to enable the progressive elements to overcome the obstruction of small minorities."

The Huddersfield Chamber of Commerce did not allow the plea to go unchallenged, but the issue has been raised, and the industry cannot hope to escape the repercussions of the parallel discussion in Lancashire. In short, a limited measure of recovery has raised the problem whether the industry will be able to stand on its proud claim that it can manage its own affairs, or whether voluntary co-operation will prove insufficient to deal with major economic problems that are present.

Organized labour at this time was concerned with the problem of shortening the working week. Whether the proposal was prompted by the desire to spread work and reabsorb the unemployed, or by a desire to raise the real wages of those in employment was not easy to assign.

The Abyssinian conflict and the problem of sanctions raised no serious direct issue for the wool textile industry. In 1934 Italy took only 757,000 lb of tops out of a total export from this country of nearly 42,000,000 lb. Of woollen tissues she took only 1,328,000 square yards out of a total export of nearly 69,000,000 square yards, and of worsted tissues only 369,000 square yards out of a total of 33,000,000 square yards. Even if this export trade had been lost altogether the wool textile industry would not have been seriously shaken. But what was felt to be unpredictable was the net effect of sanctions on wool textile exports to countries whose general trade with Italy was a substantial item in the year's business. If they too cut off their trade with Italy we might have to be content with a smaller trade with them.

In 1936 unemployment among insured operatives in the United Kingdom as a whole fell steadily during the course of the year, and the general improvement in trade was shared by the wool textile industry. The percentage of unemployment there fell from 9.3 in January to 6.4 in December, but a fall in the numbers unemployed was not accompanied by a rise in the index of production. It has been stated above that in the fourth quarter of 1935 the Board of Trade index for woollen and worsted production stood at 117. During the first quarter of 1936 it fell back to 113.5, in the second quarter to 110.7, and in the third quarter to 110.5.

The contraction in production reflected in these figures was

not evenly distributed. On the whole the woollen section was busier than the worsted, and some branches of the export trade more active than others. Exports of semi-manufactured goods (tops and yarns) were below the figures for 1935. Exports of cloth were greater in woollens but about the same in worsteds.

The interesting point about the fall in the index of production is that it suggests that business in the home market did not keep step with activity in the export trade in 1936. Attention has already been drawn to the effect of the introduction of the general tariff and the change in the proportions of home and export trade. The welcome increase in the exports of fully manufactured goods in 1936 must be viewed in the light of the volume of export trade that the industry used to enjoy. Even after the improvement the exports in 1936 were only rather more than half of the amount of cloth sent abroad in 1924. The other side of this matter—the increase in the home consumption of cloth since 1931—is that a better home market has made good only about half the loss experienced in the export trade in the last ten years.

The increased activity enjoyed by the industry brought with it the problems of juvenile labour and wages. The annual returns of insured operatives show that in July, 1936, the total was 223,210 compared with 221,720 in July, 1935. This reversal of the downward trend in the number of workers in the industry raised the question of whether it was likely to be permanent. In the first place the shortage of juvenile labour was being met in part by the return to the mill of many married women to help their former employers in the emergency. In the second place it was apparent that the question of juveniles was bound up with the larger question of the falling birth rate. It had been estimated that this falling birth rate would reduce within a space of seven or eight years the number of children in the schools of the country by about a million. The experience of Leeds and the wool textile centres confirmed the difficulty that such a state of affairs would produce in all industrial centres. In Leeds, for example, it was to be noticed that the competition for recruits had become keener between the wholesale clothing industry, wool textiles, and the printing trade. Firms on the outskirts of the larger centres such as Leeds and Bradford were finding that they were compelled to

offer higher pay to induce operatives to travel out of the cities or larger towns, a development that might accentuate the problem of different rates of pay in different areas. Alternatively, it was realized that firms might be compelled to consider the possibility of doing their work with a smaller proportion of juvenile operatives.

An effort on the part of the trade unions to restore wages to the level at which they stood before the cuts of 1930 and 1931 (20 per cent in all) was not wholly successful, but a 10 per cent advance was secured in December, 1936.

The question of recruitment called attention to the unsatisfactory position of the Joint Industrial Council. Since the breakdown of the wages negotiations at the close of 1927 this body has not served as the recognized medium of negotiation between employers and operatives. It was now suggested that the Council might be restored to its former activity and prestige and formulate plans by joint discussion for the recruitment of labour.

When the Three Power Agreement about the stabilization of rates of exchange was announced in September, 1936, the wool textile industry once more became aware of the conflict of opinion and interests within its borders. Throughout this country the agreement was generally applauded as the first step in the process of freeing world trade from quotas, excessive tariffs and exchange restrictions. From one angle the industry was bound to welcome this, because it had everything to gain from freer international trade accompanied by larger volume of exports. But there were many who had lively recollections of the "unfair competition" they had suffered from countries with depreciated currencies. That experience had led to the approval of the tariff policy, with the subsequent change in the balance between home and export trade. It did not seem likely therefore that those who had found better business at home behind the tariffs would readily consider any relaxation of them, if that had to be part of the price to be paid for the stabilization of the franc, the dollar, and the pound.

In 1936 the rise in wool prices that was under way by the middle of 1935 was maintained. Normally a strengthening raw materials market is welcomed, but in this case the rise produced a new type

of problem. When raw wool costs more, tops, yarn and cloth in turn cost more. Now the seller of the cloth found himself confronted with the difficulty of the "fixed price" policy developed by multiple stores. Those stores offer garments at a fixed price. If that price is adhered to the same quality of cloth cannot be put into the garment when the price of cloth is rising. Cloth manufacturers discovered more acutely than ever before the resistance of the multiple clothiers to any advance in price. The only alternative left to the manufacturer was to revise the quality of the cloth to keep it within the price the clothier would pay. Manufacturers felt sore about this difficulty of passing on the rise in the cost of production, arguing that better business and better earnings in a wide range of trades enabled the purchaser to pay a little more for his garments.

Another point of interest to the economist arises out of this new relationship between the maker of cloth and the buyer. When there was competition among buyers it was the cloth manufacturer who sold to the highest bidder, and thus controlled the market. Now the power is passing to the buyer of bulk supplies of cloth. He fixes the price at which he will buy, and the would-be seller of the cloth must adjust his costs of production to that price. So the wool textile industry finds itself compelled to part company with the traditional belief that a product of quality will always find its market. It has now to examine in far greater detail the process of producing a cloth "at a price."

The early weeks of 1937 were notable for the spirit of optimism that had come to prevail. The drop in the index of production for the industry which had occurred during the first three quarters of 1936 had been sharply reversed in the final quarter of that year and the index stood at 118 for the fourth quarter, compared with 112.4 for the third quarter. But the optimism was to be short-lived. The percentage of unemployment began to move more erratically and exhibited an upward trend. The index of production for wool textiles fell back to 116.4 in the first quarter, rose again to 119 in the second quarter, in spite of a rise of the percentage of unemployment to 10.1, and by the end of the third quarter fell back again to 114. Unemployment was slightly higher at 10.4 per cent.

In the last quarter of 1937 there was an unexpected and severe collapse in raw wool prices, a check to business and a quick rise in the volume of unemployment. By the end of the year the percentage of unemployment in the industry was about 18 per cent compared with 6.4 per cent at the corresponding date in 1936. The year that opened with the prospects of good trade, improved output and employment, closed with much less satisfactory prospects than it had enjoyed twelve months before.

The number of insured operatives in the industry showed little change from the 1936 total—223,260 in July, 1937, compared with 223,310 in July, 1936. Already more than one reference has been made to the reduction in the staff of operatives in the industry between 1927 and 1937, but not all textile activity suffered this decline. The number in the cotton industry shrank from 570,110 to 408,530 over the same period. The number in linen manufacture fell from 85,130 to 76,320, and the textile dyeing and finishing group from 120,960 to 102,450. On the other hand the silk and artificial silk industries, hosiery, and wholesale clothing experienced appreciable expansion—the wholesale clothing industry rising from 200,970 to 215,120. These changes have occasioned the query whether the making of cloth is suffering a diminution of unemployment at the same time as those industries converting cloth into garments are experiencing an increase of staff.

The break in wool prices during the last three months of the year recalled the collapses of 1934 and 1925, but the rapidity of the fall in prices was much more marked. After a steady rise for over two years wool registered within a space of ten or twelve weeks a decline of from 25 to 30 per cent in values.

A satisfactory explanation is hard to find. The carry-over of wool from the previous season had not been heavy, stocks were reported to be appreciably less than the year before, and there was no indication of any substantial increase in supplies from the primary markets. Wool data alone afforded no evidence of the impending collapse. The wool market proved unusually susceptible to fears of a general disturbance in trade. There was "piracy" in the Mediterranean, and conditions in Spain were held to contain the possibility of more widespread war. The Japanese

invasion of China meant the loss of trade with that country, Wall Street was erratic and the French franc unstable. To crown all, when the principal initial wool sales of the season opened in Australia, the Japanese buyers were not there, and this was taken as a signal that the feared reaction in trade had set in. Orders for piece goods for the spring trade were held up, and cloth-makers, spinners and top-makers in sequence were confused by the daily downward bidding towards a minimum that no one dared define. After twelve weeks of this prices steadied a little, but the damage to trade had been done, and in the opening months of 1938 a higher level of unemployment and a reduction in the percentage of machinery activity were the inevitable sequel to this disastrous disturbance of the wool market.

One point is worthy of note. The collapse of prices called forth criticism of the Australian growers for not meeting the situation at the outset by a control of supplies. A little later the supplies were more closely regulated, but the lesson to be learnt from the course of events is the same as that to which attention has already been drawn on the manufacturing side, namely, the increasing disposition to handle exceptional circumstances by some scheme of regulation. This development is in such sharp contrast to the individualism with which the industry has grown up that it cannot fail to have an important bearing on the future. In the early part of 1938 a group of worsted spinners raised the question of price-cutting and the redundancy of spinning plant. Now that section of the industry is in process of building up a scheme, based on voluntary co-operation it is true, to deal with these two difficult questions. The point is that a willingness to consider organized control is there, and the perplexities of the last ten or fifteen years have induced this change of thought and action.

This summary of conditions in the wool textile industry during the years of recovery from the depression of 1930-1 shows that while things have been better, nothing in the nature of a boom has been experienced. The persistence of the problem presented by a reduced export trade has told its tale upon the staffing of the industry, and has created the difficult question of redundancy. The industry has become one that is now dependent in the main

for its prosperity upon the state of the home market. It is peculiarly susceptible, therefore, to conditions in other trades. In 1938 it is apprehensive about what may happen in those other trades, and to the purchasing power of their operatives, when the heavy exceptional expenditure on armaments comes to an end. No wide range scheme of reorganization of the whole industry, such as that which has been formulated in the Lancashire cotton industry, has been suggested for wool textiles, but there is the same division of opinion as in Lancashire. The stress of competition for business both at home and abroad has made price-cutting more acute. The belief that economic prices might be established by voluntary co-operation is one view; the belief that statutory authority by way of an Enabling Act is the only solution is another view. It is not too much to say that a considerable part of the time of those in the industry will be occupied in the immediate future with this conflict of views. The process of recovery from depression has not re-established the wool textile industry in its old modes and ideas. The threat of a renewed depression leaves the industry wondering what is likely to happen next.

EXPORTS FROM UNITED KINGDOM

	Tops (Million lb)	Worsted Yarns (Million lb)	Woollen Tissues (Million sq yds)	Worsted Tissues (Million sq yds.)
1913	43·6	49·9	141·2	78·1
1924	41·2	45·6	164·7	56·8
1931	28·0	29·8	56·3	29·7
1932	41·7	32·0	53·5	28·3
1933	45·8	35·8	61·3	32·9
1934	41·7	34·1	68·9	33·3
1935	55·9	33·1	71·3	38·6
1936	52·1	29·0	78·2	39·8
1937	40·2	25·4	79·8	43·0

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